START

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

FEB 06 1995

95-PCA-164

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Mr. Joseph J. Witczak
Unit Supervisor
Regulatory and Technical Support Unit
Nuclear Waste Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Messrs. Sherwood and Witczak:

CLOSE-OUT OF THE 303-K STORAGE FACILITY CLOSURE PLAN NOTICE OF DEFICIENCY COMMENTS (S-3-1, M-20-13)

References:
1. Letter, T. L. Nord, Ecology, to S. H. Wisness, RL, "Notice of Deficiency for the 303-K Radioactive Mixed-Waste Storage Facility Closure Plan and the 304 Concretion Facility Notice of Deficiency Response Tables," dated November 6, 1990.
2. Letter, T. L. Nord, Ecology, to S. H. Wisness, RL, "Notice of Deficiency for the 303-K Radioactive Mixed Waste Storage Facility Notice of Deficiency Response Tables," dated April 26, 1991.
3. Letter, S. E. McKinney, Ecology, to R. N. Krekel, RL, "Notice of Deficiency for the 303-K Radioactive Mixed Waste Storage Facility Notice of Deficiency (NOD) Response Table Dated November 18, 1991," dated April 23, 1992.

The U.S. Department of Energy, Richland Operations Office (RL) and the Westinghouse Hanford Company (WHC) are submitting the completed 303-K Storage Facility Notice of Deficiency (NOD) response table to the U.S. Environmental Protection Agency (EPA) and the State of Washington Department of Ecology (Ecology). This NOD response table includes the 62 written comments on Revisions 0 and 1 of DOE/RL-90-03, "303-K Storage Facility Closure Plan," and the one verbal comment from Revision 2 of the Closure Plan. The basis of determining completion of the NOD response table is discussed below. Also, RL and WHC recommend that work on the final page changes to Revision 2 of the Closure Plan begin immediately.

At the November 17, 1993, Unit Managers' Meeting (UMM), the status of the 62 NOD comments for Revisions 0 and 1 of the Closure Plan was discussed. The 62 NOD comments were determined either to have been closed by References 1, 2, and 3 or provisionally closed as of this UMM pending Ecology's review of Revision 2 of the Closure Plan.

Revision 2 of the Closure Plan was issued on December 17, 1993, for Ecology's review. At the September 23, 1994, UMM, the Ecology Unit Manager verbally indicated that the NOD comments (Number 1 through Number 62) from Revisions 0 and 1 of the Closure Plan have been adequately addressed in Revision 2 or in the Hanford Facility Resource Conservation and Recovery Act Permit (Hanford Facility RCRA Permit). On this basis, all of the NOD comments (Number 1 through Number 62) from Ecology's review of Revisions 0 and 1 of the Closure Plan, are considered to be resolved and closed as of September 23, 1994.

One verbal NOD comment on Revision 2 of the Closure Plan was provided by Ecology at the September 23, 1994, UMM. This comment noted that the Closure Plan Chapter 8, "Postclosure," did not include the notice to the local land-use authority. At the October 13, 1994, UMM, RL and WHC verbally accepted Ecology's comment. This single Ecology comment and the RL and WHC response have been added to the NOD response table as Comment Number 63.

With RL and WHC acceptance of Ecology's last verbal NOD comment (Number 63), RL and WHC consider the Closure Plan workshops and NOD response table to be complete. To prepare the Closure Plan for future public review and ultimate inclusion in the Hanford Facility RCRA Permit, work will begin immediately on the page changes required to incorporate NOD Comment Number 63 into the Closure Plan.

Should you have any questions, please contact Ms. E. M. Mattlin, RL, on (509) 376-2385 or Mr. F. A. Ruck III, WHC, on (509) 376-9876.

Sincerely,

James E. Rasmussen

James E. Rasmussen, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Operations Office

EAP:EMM

William T. Dixon, Director
Environmental Services
Westinghouse Hanford Company

Enclosure:
303-K Storage Facility Notice of
Deficiency Response Table

cc w/encl:
Admin. Record
EDMC, H6-08
D. Duncan, EPA
M. Jaraysi, Ecology
S. McKinney, Ecology
F. Ruck III, WHC
J. Bartz, GSSC

cc w/o encl:
W. Dixon, WHC
R. Jim, YIN
D. Powaukee, NPT
S. Price, WHC
J. Wilkinson, CTUIR

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

... Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

November 6, 1990

Mr. Steven H. Wisness
Hanford Project Manager
U.S. Department of Energy
P.O. Box 550
Richland, Washington 99352

Re: Notices of Deficiency for the 303-K Radioactive Mixed-Waste Storage Facility Closure Plan and the 304 Concretion Facility Notice of Deficiency Response Tables

Dear Mr. Wisness:

This letter transmits Ecology's comments on the 303-K Radioactive Mixed-Waste Storage Facility and the 304 Concretion Facility Closure Plan Notice of Deficiency Response Tables of October 1990. The Response Tables were individually reviewed for compliance with final facility status standards in the state Dangerous Waste Regulations (Chapter 173-303 WAC).

Although these tables were reviewed separately, they were found to have the same primary areas of concern. These are as follows:

1. The changes proposed to address the lack of detail in these plans will not adequately correct their deficiencies.

2. Although the stated goal for these sites is clean closure, the closure strategy outlined will not fulfill the performance standards of the Dangerous Waste Regulations for clean closure.

3. The quality assurance and quality control remain inadequate.

4. The RCRA/CERCLA integration strategy proposed for these sites remains inappropriate and must be reevaluated.

5. Controls for the health and safety hazards associated with radioactive contaminants are still not adequately addressed. The cleanup of the radioactive constituents remains inappropriately deferred from the closure activities.

I am requesting that USDOE/WHC respond to these comments with revised Closure Plans. These Plans should be submitted no later than January 3, 1991. Should you have questions or concerns regarding these notices, please contact Megan Lerchen of my staff at (206) 438-3089.

Sincerely,

Timothy L. Nord
Hanford Project Manager

Enclosures

cc: P. Day - EPA, Richland
D. Duncan - EPA, Seattle
T. Michelena - Ecology, Olympia
T. Veneziano (AR) - WHC

DEPARTMENT OF ECOLOGY
NOTICE OF DEFICIENCY FOR
THE 304 CONCRETION FACILITY
NOD RESPONSE TABLE OF OCTOBER 1990
November 6, 1990

The following comments correspond to the numbers from the 304 Concretion Facility Closure Plan NOD Response Table dated October 5, 1990. Proposals made in the following comments are accepted by Ecology:

2	3	5	7	8	9	10	12	15	19	22
26	29	33	34	36	39	41	43	44	45	46
47	48	49	51	52	53	55	56	59	61	63
64										

Proposals made in the following comments are accepted by Ecology pending submission of further information as proposed in the USDOE-RL/WHC responses:

1	6	11	13	14	16	18	23	24	25	30
31	37	40	42	54	58	62	65	67		

Proposals made in the following comments are not accepted by Ecology:

4	17	20	21	27	28	32	35	38	50	57
60	66									

In numerous instances changes to the closure plan are proposed, yet the exact language is not provided. Following this course will result in USDOE/PNL producing a document without specific guidance from Ecology. In order to minimize the number of corrections that will be necessary in the next revision of the closure plan, the proposed changes will be addressed within the scope of the Unit Managers Meetings. Provide draft text revisions for the following comment numbers to Ecology for discussion purposes:

4	11	14	17	18	23	25	27	32	31	42
54	57	58	60	65						

It is anticipated that the above issues will be the most difficult to achieve consensus between the parties. Other issues may also cause confusion; text revisions for these may be provided to Ecology for comment as well.

General Comment: USDOE-RL/WHC repeatedly proposes development of clean closure performance standards that are not in accordance with those stipulated under WAC 173-303-610(2)(b). This is unacceptable; the only closure performance standards allowable under the Dangerous Waste Regulations for clean closure are those stipulated in WAC 173-303-610(2)(b). However, while clean closure is a desirable goal in all cases, in some instances it may not be feasible. If clean closure is not attainable, then compliance with the requirements of WAC 173-303-610(7) through -610(11) is necessary.

4. Comment: This NOD comment addresses a number of issues, these are as follows:

   a. DOE-RL/WHC proposes, "If dangerous constituents are determined to exist in concentrations above action levels and reevaluation of action levels is not warranted, remediation of the soil will be evaluated under the CERCLA RI/FS process for the 300-FF-3 Operable Unit." This is not acceptable. See comment numbers 17 and 60.

b. DOE-RL/WHC states that because the proposed method of closure for the 304 Concretion Unit is clean closure, "... a postclosure plan is not required unless the facility cannot be clean closed." A postclosure plan is required; this must be included in the next revision of the closure plan.

c. DOE-RL/WHC proposes to include a number of paragraphs within the text in order to clarify the definitions of "baseline," "baseline threshold," and "action level." These terms should be defined in a section for acronyms, abbreviations, and definitions similar to that provided in Part B permit applications. How these concepts will be used in developing the cleanup strategy to be implemented after obtaining the results of the sampling and analysis at the unit should be provided in both the form of a narrative and flow-chart in the appropriate sections of the closure plan.

Requirement: Compliance with the above is required. Provide draft language to Ecology for interim guidance.

16. Transcription Error: The transcription of Ecology's NOD requirement incorrectly cites WAC 173-303 for the Model Toxics Control Act (MTCA). The citation as originally provided (WAC 173-340) is correct. Refer also to NOD comment number 18.

17. Comment: For clean closure, the building and concrete and asphalt pads must be decontaminated to the contamination levels stipulated in WAC 173-303-610(2)(b) or removed from the unit boundaries. The approach proposed for the soil cleanup is unacceptable. The soil must be cleaned to at least area background levels (area background is defined in WAC 173-340-200). If contamination remains in the soil that exceeds the performance standards stipulated in WAC 173-303-610(2)(b), then the unit can not be clean closed. A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared.

Requirement: Compliance with the above is required. See also comment number 60.

18. Comment: USDOE-RL/WHC proposes to establish criteria for contamination levels that "pose a *substantial* threat to human health or the environment" for certifying clean closure.

Requirement: Any criteria developed for threats to human health or the environment must be based on the cleanup standards of MTCA (WAC 173-340). Any criteria for closure must have Ecology concurrence. For clean closure, the cleanup standards are stated in WAC 173-303-610(2)(b).

20. Comment: USDOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background concrete contamination levels. This is not acceptable.

Requirement: Concrete samples from areas not subject to contamination must be used for establishing a background concrete contamination value.

21. Comment: USDOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background asphalt contamination levels. This is not acceptable.

Requirement: Asphalt samples from areas not subject to contamination must be used for establishing a background asphalt contamination value.

22. General Comment: Ecology accepts DOE-RL/WHC's assertion that the process sewer begins immediately beneath the building floor.

Requirement: Ecology will require that the permitting process for the 300 Area Process Sewers incorporate all sewer lines to the point where they enter a building floor.

24. Comment: The proposed language is acceptable, but further information is required on this topic in the sampling and analysis plan to adequately describe the verification sampling.

Requirement: Describe the sampling and analytical parameters for the verification sampling. This must include the sample size, target analytes, and quality assurance/quality control plan. Refer to the 2101-M Pond Closure Plan for guidance.

27. Comment: DOE-RL/WHC proposes expanding the text "to indicate the option of cleaning to baseline if feasible."

Requirement: Cleaning the unit's soils to at least area background contamination levels is not optional. Revise the closure strategy as necessary to reflect this. See comment numbers 17 and 60.

28. Comment: In order to clean close the 304 Concretion Unit, the contamination levels of dangerous wastes and dangerous waste residues must be decontaminated or removed to meet the performance standards stipulated in WAC 173-303-610(2)(b).

Requirement: This requirement must be integrated within the closure plan. See comment numbers 17 and 60.

32. Comment: Development of a soil sampling plan based on the 300 Area Solvent Evaporator (300 ASE) is inappropriate; the 300 ASE is located on top of a burial ground.

Requirement: The soil sampling plan must address vadose zone contamination at this unit.

35. Comment: Because of the past uses of this building, it is not possible to determine conclusively what type of contaminants will be expected due to past practices. For clean closure it is required that all dangerous wastes or waste residues (including soil) be cleaned or removed to the performance standards stipulated in WAC 173-303-610(2)(b). Levels of contamination in the soils above these performance standards but below area background values may be managed under the CERCLA clean-up if this is provided for within the postclosure plan.

Requirement: Revise the closure plan to comply with the above. See comments 17 and 60.

38. Comment: Analysis for only a limited number of organic compounds is proposed, see comment number 35.

Requirement: A more comprehensive list of organic analytes must be evaluated.

44. Comment: Concrete and asphalt background samples may not be obtained within a TSD unit.

Requirement: Refer to comment numbers 20 and 21.

50. Comment: USDOE-RL/WHC proposes that the requirement for the unit-specific personnel decontamination procedures be provided in the Hanford Site-Wide health and safety plan.

Requirement: The unit-specific plan must be presented within the unit's closure plan. It is anticipated that the health and safety plan for the 304 Concretion unit will be more detailed than that for the Site-wide. Refer to comment number 54.

52. Comment: This is acceptable if uranium testing is the only variance from the analytical methods stipulated in WAC 173-303-110.

Requirement: Any analytical methods which deviate significantly from the methods stipulated in WAC 173-303-110 must be submitted to Ecology to determine acceptance prior to their use.

57. Comment: Although Ecology requested information regarding training, USDOE/WHC states that the information provided is, "sufficient for the purposes of this closure plan." The information presented is not adequate.

Requirement: Describe the course contents and list which training is required for individual job classifications.

60. Comment: There appears to be some confusion about the closure strategy acceptable to Ecology. This unit is being permitted to close under WAC 173-303, therefore, the performance standards of WAC 173-303-610 must be met. Ecology has determined that if clean closure of the soils to these standards is not appropriate due to wide spread contamination throughout the 300-FF-3 Operable Unit then the soils must be cleaned to a local area background contamination levels and the RCRA postclosure must be managed within the requirements of the CERCLA closure.

Requirement: Ecology will accept a closure plan in which soils with contamination levels exceeding the performance standards stipulated under WAC 173-303-610(2)(b) may be left in place under the following two conditions:

- The contamination levels do not exceed the area background contamination levels present throughout the 300-FF-3 Operable Unit and
- The RCRA postclosure plan provides for management of the 304 Concretion Unit within the CERCLA cleanup.

Revise the closure plan accordingly.

62. Comment: DOE-RL/WHC states, "... equipment used during closure activities will be decontaminated or disposed of according to EIIs 4.2, 5.4, and 5.5."

Requirement: This is acceptable pending Ecology's review of the cited EIIs. Ecology anticipates that these will be reviewed as part of the development of the Hanford Site-Wide Permit.

65. Comment: DOE-RL/WHC argues that a legal description of the unit is not required at this time because a) it is not required under WAC 173-303 if the unit is clean closed or b) if it is not clean closed, the information would not be provided until after remediation because the size of the area to be remediated would not be known.

Requirement: In order to plan a cleanup of this unit, it is necessary to know the boundaries. Ecology realizes that there is some difficulty in obtaining the precise legal boundaries at this point in time, however, we also recognize that boundaries must be determined in order to determine the scope of the cleanup for this unit. Provide the legal description of this unit when the information is available. In the interim, provide a description and illustration of the boundaries of this unit for use in the closure of the unit. Note that the asphalted area surrounding the building will be considered part of this unit. The sampling plan must be revised to incorporate this area.

66. Comment: DOE-RL/WHC proposes to provide a postclosure plan if the soil cannot be clean closed which will describe, "... the interim stabilization and care prior to remediation under the CERCLA RI/FS process." This is not adequate for the purposes of a postclosure plan. The postclosure plan

must be provided with the closure plan. It must provide for management of the unit through the CERCLA closure process. Refer to WAC 173-303-610(7) for guidance. It will not be necessary to implement the postclosure plan if the performance standards of WAC 173-303-610(2)(b) for clean closure are met.

Requirement: Compliance with the above is required.

68. Comment: USDOE-RL/WHC explains the table title indication of a 5 percent frequency.

Requirement: This type of information should be provide in the quality assurance/quality control section of the closure plan. Refer to the 2101-M Pond Closure Plan in development for guidance.

DEPARTMENT OF ECOLOGY
NOTICE OF DEFICIENCY FOR
THE 303-K STORAGE FACILITY NOD
RESPONSE TABLE OF OCTOBER 1990
November 6, 1990

The following comments correspond to the numbers from the 303-K Radioactive Mixed-Waste Storage Facility Closure Plan NOD Response Table dated October 5, 1990. Proposals made in the following comments are accepted by Ecology:

1	2	5	8	9	10	11	13	15	18	19
20	22	29	30	31	35	39	40	42	44	45
46	47	48	52	55	57	60	61			

Proposals made in the following comments are accepted by Ecology pending submission of further information as proposed in the USDOE-RL/WHC responses:

3	4	6	16	28	32	33	34	36	38	41
43	49	50	54	58	59					

Proposals made in the following comments are not accepted by Ecology:

7	12	14	17	21	23	24	25	26	27	28
37	51	53	56	62						

In a number of instances changes to the closure plan are proposed, yet the exact language is not provided. Following this course will result in USDOE/PNL producing a document without specific guidance on these topics from Ecology. In order to minimize the number of corrections that will be necessary in the next revision of the closure plan, the proposed changes will be addressed within the scope of the Unit Managers Meetings. Provide draft text revisions for the following comment numbers to Ecology for discussion purposes:

4	12	16	25	36	49	50	53	56	62

It is anticipated that the above issues will be the most difficult to achieve consensus between the parties. Other issues may also cause confusion; text revisions for these may be provided to Ecology for comment as well.

General Comment: USDOE-RL/WHC repeatedly proposes development of clean closure performance standards that are not in accordance with those stipulated under WAC 173-303-610(2)(b). This is unacceptable; the only closure performance standards allowable under the Dangerous Waste Regulations for clean closure are those stipulated in WAC 173-303-610(2)(b). However, while clean closure is a desirable goal in all cases, in some instances it may not be feasible. If clean closure is not attainable, then compliance with the requirements of WAC 173-303-610(7) through -610(11) is necessary.

3. Comment: USDOE-RL/WHC states that additional maps will be provided if a specific request is made.

Requirement: Maps which delineate the waste management areas, and describe and illustrate the land uses in the immediate area (i.e., what are the nearby buildings, etc.) must be included in the next revision of the closure plan.

6. Comment: The USDOE-RL/WHC discussion along with the proposed new tables and drawings will provide the information requested by Ecology.

Requirement: Revise the text of the closure plan to include the discussion provided in this response.

7. Comment: The information presented is not adequate for documenting that Table 4-1 covers all wastes sent to the unit.

Requirement: Edit the text and legend regarding this table to indicate it is not comprehensive. In addition, incorporate the text presented in the closure plan.

12. Comment: DOE-RL/WHC proposes to include a number of paragraphs within the text in order to clarify the definitions of "baseline," "baseline threshold," and "action level." Any terms not defined should be defined in a section for acronyms, abbreviations, and definitions similar to that provided in Part B permit applications. How these concepts will be used in developing the cleanup strategy to be implemented after obtaining the results of the sampling and analysis at the unit should be provided in both the form of a narrative and flow-chart in the appropriate sections of the closure plan. Ascertain whether or not these terms are appropriate within the requirements of Chapter 173-303 WAC, see the next paragraph for guidance.

The proposed text and clean closure objectives are not acceptable. The original requirement in Ecology's NOD stated that the closure standard for this facility will be background. From USDOE-RL/WHC's response it appears that clarification of this comment is necessary. Under WAC 173-303-610(2)(b), closure performance standard, the levels of dangerous waste or dangerous waste constituents or residues remaining after closure of a unit may not exceed background environmental levels or designation limits for clean closure. If these performance standards cannot be met then the unit is subject to subsections (7) through (11) of WAC 173-303-610. Refer to WAC 173-303-610 for guidance.

The approach proposed for the soil cleanup is unacceptable. The soil must be cleaned to at least area background levels (area background is defined in WAC 173-340-200), not baseline. A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared.

Requirement: Compliance with the above is required.

14. Comment: USDOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background concrete contamination levels. This is not acceptable.

Requirement: Concrete samples from areas not subject to contamination must be used for establishing background concrete contamination values.

17. Comment: USDOE-RL/WHC proposes to revise the text to, "The decision on remediation of soil (clean to baseline or defer to CERCLA) ...."

Requirement: The soils must be remediated to at least area background contamination levels. See comment number 12.

21. Comment: USDOE-RL/WHC proposes a text revision to state, "... waste stored more than 90 days will be transferred ...." This does not give all the information requested in the original comment. It is unacceptable to have dangerous waste stored in the same location in which closure activities are taking place.

Requirement: Specify the locations where waste will be transferred and the timing of the transfer for all waste stored at the unit, including waste stored less than ninety days.

23. Comment: USDOE-RL/WHC will describe any deviations from required test methods.

Requirement: Procedures for any test method which deviates from required test methods must be submitted to Ecology with a request for approval of the substitute method.

24. Comment: Development of a soil sampling plan based on the 300 Area Solvent Evaporator (300 ASE) is inappropriate; the 300 ASE is located on top of a burial ground.

Requirement: The soil sampling plan must address vadose zone contamination at this unit. Refer to the 2101-M Pond Closure Plan in development for guidance.

25. Comment: USDOE-RL/WHC states that all of the dangerous waste constituents stored at the 303-K Facility are listed on Table 7-1.

Requirement: This table must be revised to list all constituents of concern. This includes any radioactive constituents. Refer to Section 6.3 of the Hanford Federal Facility Agreement and Consent Order. This requirement also applies to comment numbers 26 and 27.

30. Comment: USDOE-RL/WHC states that the *Environmental Investigations and Site Characterization Manual* (EII Manual, WHC-CM-7-7) has been submitted as part of the Hanford Site-Wide permit and that no changes to the text are required.

Requirement: Reference to the entire EII manual is not acceptable. The specific section must be referenced. Note that acceptance of any EII procedure is dependent on Ecology review and approval. Ecology anticipates that these will be reviewed as part of the development of the Hanford Site-Wide Permit.

36. Comment: USDOE-RL/WHC is developing a set of criteria for baseline values in the 300 Area.

Requirement: The appropriate criteria is area background (see comment number 12). A plan for determining these values must be submitted to Ecology; it should include at least the sampling plan, a quality assurance/quality control plan, and a timetable for this effort. This plan may be submitted under separate cover and used for TSD units throughout the 300-FF-3 Operable Unit.

37. Comment: Concrete and asphalt samples obtained within a TSD unit will not be accepted for determination of background contamination values.

Requirement: Refer to comment number 14.

51. Comment: USDOE-RL/WHC proposes revising the text to state, "The 90-day period will begin when the material is designated." As previously stated, the 90-day clock begins at the time of generation; counting the 90-day period from the time of designation is likely to result in non-compliance.

Requirement: Revise the text to state, "The 90-day period will begin when the material is *generated*."

53. Comment: Although Ecology requested information regarding training, USDOE/WHC states that the information provided is, "adequate for this closure plan." The information presented is not adequate.

Requirement: Describe the course contents and list which training is required for individual job classifications.

56. Comment: USDOE-RL/WHC states that in no case will a cover design be necessary. If it is determined after the sampling and analysis that it will be necessary for contaminated soils to be left in place until the CERCLA cleanup then a cover may be required; no other contaminated materials will be allowed to be left in place. This cover must be designed and approved prior to closure as part of the postclosure plan.

Requirement: Submit specifications for cover materials and design within the required postclosure plan. See comment number 62.

62. Comment: USDOE-RL/WHC states that they will not submit a postclosure plan. A postclosure plan is required, it should be presented in the form of an additional chapter to the closure plan with appendices as appropriate.

Requirement: A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared and submitted to Ecology.

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

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April 3, 1991

Mr. Steven H. Wisness
Hanford Project Manager
U.S. Department of Energy
P.O. Box 550
Richland, Washington 99352

Re: Notice of Deficiency for the 304 Concretion Facility Notice of Deficiency Response Table

Dear Mr. Wisness:

This letter transmits Ecology's comments on the 304 Concretion Facility Closure Plan Notice of Deficiency Response Table dated January 30, 1991. The information presented was reviewed for compliance with final facility status standards in the state Dangerous Waste Regulations (Chapter 173-303 WAC).

The areas of concern for this closure plan are as follows:

1. The level of detail is inadequate.

2. Proposals relating to closure standards will be impacted by a closure policy that is currently being developed by the Nuclear and Mixed Waste Management Program (N&MWMP).

3. The quality assurance and quality control provisions remain inadequate.

4. Controls for the health and safety hazards associated with radioactive contaminants are still not adequately addressed. Furthermore, it is unacceptable to omit cleanup of the radioactive constituents from these closure activities.

Mr. Steven H. Wisness
April 3, 1991

USDOE/WHC must respond to these comments with a revised closure plan. However, because the revision will be affected by the N&MWMP Closure Policy under development, the date for submittal will be transmitted to USDOE/WHC with the finalized policy. Should you have questions or concerns regarding this notice, please contact Ms. Megan Lerchen of my staff at (206) 438-3089.

Sincerely,

Timothy L. Nord
Hanford Project Manager

Enclosure

cc: P. Day - EPA, Richland
D. Duncan - EPA, Seattle
D. Nylander - Ecology, Kennewick
T. Michelena - Ecology, Olympia
T. Veneziano (AR) - WHC

DEPARTMENT OF ECOLOGY
NOTICE OF DEFICIENCY FOR
THE 304 CONCRETION FACILITY
NOD RESPONSE TABLE OF JANUARY 1990
April 3, 1991

The following comments correspond to the numbers from the 304 Concretion Facility Closure Plan NOD Response Table dated January, 1990. Underlined numbers signify changes made since the previous NOD. Proposals made in the following comments are accepted by Ecology:

2	3	5	7	8	9	10	11	12	14	15
19	22	26	28	29	31	33	34	36	39	41
42	43	44	45	46	47	48	49	51	52	53
55	56	58	59	61	63	64	65			

Proposals made in the following comments are accepted by Ecology pending our review of further information as proposed in the USDOE-RL/WHC responses:

1	6	13	16	18	23	24	25	30	35	37
40	54	62	65	67						

Proposals made in the following comments are not accepted by Ecology:

4	17	20	21	27	32	38	50	57	60	66

4. USDOE/WHC Proposal: A number of proposals relating to closure standards are made.

Ecology Response: Ecology is developing a policy for soil closure standards. It is anticipated that this policy will impact the proposals made by USDOE/WHC. In keeping with the Tri-Party Agreement, an integral part of this policy will be the goal of only one remediation at any unit; i.e., it will not be acceptable to postpone any part of the closure activities to the 300-FF-3 Operable Unit response. This closure policy will be made available to USDOE/WHC as soon as possible.

17. USDOE/WHC Proposal: USDOE-RL/WHC discusses a closure strategy.

Ecology Response: The acceptability of this proposal will be dependent on conformance with the Ecology closure policy which is in development. See number 4 for details.

18. USDOE/WHC Proposal: Setting health-based standards for closure.

Ecology Response: The Ecology policy for closure will cover health-based standards. See number 4.

304 Concretion Facility Closure Plan
Second NOD Response Table Comments
April 3, 1991

20. USDOE/WHC Proposal: Using TCLP to demonstrate that potentially contaminated concrete samples do not designate as dangerous waste.

Ecology Response: This approach seems reasonable but too narrow in scope; following the designation procedure delineated under WAC 173-303-070 will be acceptable. This may not be sufficient for clean closure, however, and it will be necessary to close in accordance with the N&MWMP closure policy under development. See number 4.

21. USDOE/WHC Proposal: Similar testing for asphalt as for concrete to demonstrate that it is not dangerous waste.

Ecology Response: This approach will be acceptable under the same caveats as for concrete. See number 20.

23. USDOE/WHC Proposal: Determination of area background is proposed at the surface, one foot, and two feet depths. It is stated that, "If general or source contamination exists, it would be from the past practice operations and not from operations conducted in the 304 Facility. The Tri-Party Agreement states source contamination will be evaluated and remediated under the CERCLA RI/FS process."

Ecology Response: It is not clear if this proposed background determination is to be used as part of the Hanford Site-Wide background study. If it is not, this should be clearly stated. If it is, this evaluation of the vadose zone background contaminant levels is too limited in scope. Because comparisons of contaminated vadose zone data to the 300 Area background data must be between the same soil horizons for this unit and others, the plan must be expanded to include deeper soil horizons. Refer to the Hanford Site-Wide soil background study for reference.

In the quoted statement, the first sentence is unsubstantiated and the second sentence is not in agreement with the general tenor of the Tri-Party Agreement and will not be in accordance with the closure policy under development by the N&MWMP. The quoted statement should be deleted.

25. USDOE/WHC Proposal: Inclusion of the proposed flowchart (Figure 6-1) and text (Section 6.2). There is no flowchart labelled Figure 6-1, however, the chart labelled GEN\122890-A appears to fulfill the same function and was assumed to be Figure 6-1.

Ecology Response: The flowchart is acceptable but will probably require some revision to accommodate the closure policy currently under development. The proposed text seems a little sketchy; further details

must be provided in later text. It will also need to be revised to accommodate the closure policy under development. See number 4.

27. USDOE/WHC Proposal: USDOE/WHC states, "With the exception of imminent danger, all soil remediation will be conducted under the CERCLA RI/FS process."

Ecology Response: This is unacceptable, see previous Ecology NOD's for this unit. Additionally, it will be in conflict with the Ecology closure policy in development. See number 4 for additional details.

32. USDOE/WHC Proposal: Sampling of soils to a maximum depth of two feet because it is predicted that contaminants will remain in the uppermost portion of the vadose zone due to soil sorption.

Ecology Response: While it is correct that sorbed contaminants would be expected to be in the uppermost layer, assuming that all contaminants will sorb is not correct. See, for example, Freeze and Cherry 1979 or W.B. Mills *et al.*, Journal of Association of Ground Water Scientists and Engineers, March-April 1991.

Samples must be taken at the soil-concrete and soil-asphalt interfaces, one foot, two feet, and three feet depths. The closure plan must describe the sampling methods, sample sizes, and analytical methods to be employed. The closure plan must also have detailed provisions for the case where contamination is detected at three feet (the lowest horizon). This contingency must be provided for in the scheduling of the closure activities. More specifically, the closure plan must have plans for resampling to greater depths and removal/remediation of contamination at depths greater than the initial soil sampling. In addition, all phases of the closure activities must occur in a timely fashion (including any resampling and removal/remediation necessary). See number 23.

35. USDOE/WHC Proposal: Reevaluation of the chemicals known to have been stored and used in the 304 Facility.

Ecology Response: The reevaluation is acceptable but implementation may be impacted by the closure policy under development (as discussed at the February 12, 1991, Unit Manager's Meeting). See number 4.

38. USDOE/WHC Proposal: The compounds listed in Table 7-1 are the only organic compounds associated with the 304 Facility and the only organic compounds which will be evaluated for closure.

Ecology Response: This is unacceptable. See number 35.

50. USDOE/WHC Proposal: Postpone addition of the unit-specific health and safety plan to the closure plan until sampling occurs.

Ecology Response: This is not acceptable. This plan must be submitted prior to approval of the closure plan; sufficient time for Ecology review is required. The health and safety plan must be included with the next submittal.

54. See number 50.

57. USDOE/WHC Proposal: Inclusion of proposed text, table, and appendix.

Ecology Response: This is not adequate because it is too narrow in scope. For example, the 304 Concretion Facility has radiation zones, but RPT's are not covered. Expand the training section to cover all of the personnel which are required to be present during the closure activities.

60. See number 4.

66. See number 4.

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

February 27, 1992

Ms. Annabelle Rodriguez
304 Concretion Unit Manager
U.S. Department of Energy
P.O. Box 550
Richland, WA 99352

Re: Notice of Deficiency for the 304 Concretion Facility Notice of Deficiency Response Table Dated October 17th, 1991.

Dear Ms. Rodriguez:

This letter transmits Ecology's Notice of Deficiency (NOD) for the 304 Concretion Facility Closure Plan Revision 1 and accompanying NOD Response Table dated October 17, 1991. The majority of the outstanding issues for the 304 Concretion unit concern the closure performance standards. These standards were recently issued in the Nuclear and Mixed Waste Management Program Soil Clean-up Remediation Policy (SCP).

The Notice of Deficiency comments are intended to be a guide to the major outstanding sections of the closure plan which are currently unresolved, and which will be impacted by the SCP. In addition, there are some interpretive comments regarding application of the SCP to the 304 Concretion unit. It is anticipated that upcoming Unit Manager meetings will be concerned with the specifics on how Ecology and Westinghouse Hanford Company foresee applying the SCP to this unit. These specifics will then be incorporated into the closure plan. The Soil Clean-up Remediation Policy is included with this transmittal.

If you have any questions, please contact me at (206) 493-9425.

Sincerely,

Scott E. McKinney
304 Concretion Unit Manager
Nuclear and Mixed Waste Management Program

SM:jw
Enclosure

cc: Dan Duncan, EPA
Fred Ruck, WHC
T.B. Veneziano, WHC/AR
Dave Jansen, Ecology
Dave Nylander, Ecology

DEPARTMENT OF ECOLOGY
NOTICE OF DEFICIENCY FOR
THE 304 CONCRETION FACILITY CLOSURE PLAN
NOTICE OF DEFICIENCY RESPONSE TABLE
DATED OCTOBER 17, 1991
February 28, 1992

The numbers used below reflect the numbers used in the Notice of Deficiency (NOD) Response Table dated October 17th, 1991.

Proposals made in the following comments are accepted by Ecology (underlined numbers indicate new items since the last NOD cycle):

2	3	5	6	7	8	9	10	11	12	13	14
15	19	22	26	28	29	30	31	33	34	36	39
40	41	42	43	44	45	46	47	48	49	51	52
53	55	56	57	58	59	61	63	64	67		

Proposals made in the following comments are not accepted by Ecology:

1. This requirement will be satisfied if all the other elements of the closure plan have been approved.

4. See the N&MWMP Soil Cleanup Policy (SCP), attached to this NOD. In particular, options 2 and 3 are the only options under which any contaminants may remain in the soil above natural background levels. This closure plan will need to state which option this unit is intended to be closed under, and the levels to which the soil will be remediated. Please note that taking no action to remediate the soil, unless current soil contaminant levels are below the option 1 or 2 levels, will require full post-closure activities, including but not limited to ground water monitoring, capping, access restrictions, etc. This closure plan may contain the option of sampling the soil to determine contaminant levels prior to choosing the course of action, but the plan must include the full details of all possible options (i.e., post-closure requirements).

16. The language in this section will need to be modified to reflect the closure option selected from the SCP. In particular the actions to be taken in the event clean closure is not achievable must be included with this section, including the postclosure plan.

17. Again, the language in this section will need to be modified to reflect the closure options available for the 304 Concretion unit. In particular the postclosure elements of option 2 and/or 3 must be included in the plan.

18. This section must be revised to reference the SCP regarding closure standards for soils. Also, it will not be possible to leave soil contaminants for later remediation under the operable unit. See comment number 4.

304 Concretion Facility Closure Plan
October 17th, 1991 NOD Response Table Comments
February 28, 1992

20. It continues to be the position of Ecology that concrete background must be determined from samples taken at units not impacted by past practices. Ecology is requiring that four samples be taken at different concrete "pours" around the Hanford Facility. These samples will be fully characterized and compared in order to determine what the potential range of constituent concentrations may be found in concrete pours. This approach will determine what constituents are commonly contained in concrete, and the range of variation in different pours. In addition, it will clarify what, if any, dangerous waste constituents are commonly or potentially contained in the concrete at dangerous waste designation levels. The constituents of concern that may be found in concrete should only be inorganic elements. If the variation between samples is not significant statistically, a median value for each element could be determined, and this median value could possibly be applied to other units undergoing closure at the Hanford Facility (e.g. 303-K, and 105-DR). Even if there are wide variations between the samples for certain elements, the information obtained through the sampling and analyses will help determine whether there is a potential designation problem with uncontaminated concrete. DOE-RL/WHC/PNL must submit a proposal for this background sampling to Ecology for approval prior to sampling.

21. A process similar to the concrete background plan outlined in comment number 20 will be used for asphalt. See comment number 20.

23. The use of 300 area local background levels for comparison to the 304 Concretion unit soil background levels is no longer the appropriate method. In order to qualify for a "clean closure" under WAC 173-303 it will be necessary to show that no contaminants remain in the soil that exceed the Hanford Facility-wide background levels, as determined by the Characterization and Use of Soil and Groundwater Background for the Hanford Site (Hoover and LeGore, 1991). Following approval by Ecology of this study and the findings, they will become the standards used for background closures at the Hanford Facility.

24. With the issuance of the SCP, it is not appropriate for soil remediation to be deferred to the CERCLA process. Text addressing the verification sampling of excavated sites must be discussed in the appropriate section of this closure plan. This verification sampling should reflect the closure standards of the SCP.

25. Figure 6-1 will need to be revised to reflect the SCP standards. In particular, the flow path for soils will need to be changed, since deferral to the CERCLA process is not appropriate.

27. This section of the plan must be revised to follow the SCP. See comment number 4.

304 Concretion Facility Closure Plan
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28. The language in this section regarding soil remediation must be changed. Specifically, soils which do not meet performance standards will not be left for remediation under CERCLA. Also, interim stabilization referenced here must be explained in greater detail in Chapter 8.0, in order for option 2 of the SCP to be utilized.

32. This section must be re-evaluated in light of the SCP. Sampling plans for the various scenarios possible at the 304 Concretion unit must be explained fully. For example, it will be necessary to characterize the soil beneath the 304 Concretion unit and to compare the values for the soil with the SCP. Once the soil has been characterized it can be determined what closure option is most appropriate.

35. The primary impact to this section by the SCP will be the expansion of the soil analyte parameters to include full characterization of the soils underlying the 304 Concretion unit. See comment number 4. In regard to the constituents to be analyzed, all of the analytes included in the SW-846 test methods selected for use in this sampling plan should be included in the data report. In other words, for SW-846 method 6010, all of the elements listed in Table 1 of that section should be included in the analyses. These expanded analyte parameters will add to the information available for evaluating the potential contamination at the 304 Concretion unit due to unknown chemicals stored here in the past.

37. The information contained in DOE-RL/WHC response number 1 concerning the EPA wipe sampling procedure "A compendium of Superfund Field Methods, EPA P-87-001", has not been added to this section. If it has been added to this section, or another section of this plan, it can be pointed out at the next Unit Managers meeting, and this issue will be closed. However, if it has not been added, it must be included before this issue can be closed.

38. See comment number 35.

44. See comment numbers 20 and 21.

50. As discussed at the December 19th, 1991 Unit Managers meeting, it may be acceptable to defer submittal of the Health and Safety Plan until just prior to sampling at the site. This is contingent upon the submittal of an example Hazardous Waste Operation Permit to Ecology. The exact details of the timing of HASP submittal and the sampling plan/closure plan approval will be discussed at future Unit Managers meetings.

54. See response number 50.

60. The SCP will impact this section. Namely, it is not acceptable to leave contaminated soils that exceed the SCP performance standards in place for remediation under the CERCLA process.

62. There are portions of these documents, particularly E.I.I. 4.2, that are not acceptable practices. For example, it is not acceptable at this facility to delay the marking of the accumulation date for suspected hazardous waste until after the waste has been verified as dangerous waste or it meets the requirements of section 6.4 of E.I.I. 4.2. In general, these documents are open-ended and vague, and do not consistently comply with WAC 173-303. It may be more efficient to write specific requirements for decontamination and interim storage of suspected dangerous waste than to try to change the E.I.I.'s.

65. The legal description of the facility has not been added to the post-closure section. Page 8-1, line 25.

66. All the possible options for closure of the 304 Concretion unit must be explained in detail within the closure plan. This includes the postclosure plan if one of the options for this unit is to leave dangerous waste and/or constituents in place. In the past DOE-RL/WHC have stated that their intention is to leave dangerous waste in place in the soil. If this is the closure approach for this facility, then it is necessary to submit a postclosure plan along with a permit application. WAC 173-303-610 calls for the postclosure plan to be submitted with the permit application within 90 days following the decision by the owner or operator or the department that the unit must be closed as a landfill (i.e., dangerous waste will be left in place upon closure).

68. The wording following the dash in the Table B-1 title should be deleted. The new title will read: "The 304 Wall Sampling Locations." Please note that Table B-1 on page B-2 also needs to be corrected. Correct the other table titles in B-2 as necessary.

No.	Comment/Response	Ecology Concurrence
1.	Page 1-1, line 44. This closure plan must either provide for clean closing the facility or removing all of the structures followed by interim stabilization of the soils. In other words, should soil contamination be present beyond remediation, it may be possible to defer the remediation to the CERCLA process (see comment number 14). The 303-K Building, however, must be dealt with via the RCRA closure/postclosure process. Ecology Requirement: Clarify that the 303-K Facility will be clean closed or removed via the closure plan process. **DOE-RL/WHC Response No. 1: The approach of separately evaluating the building and concrete pad or floor from the soil for clean closure will be adopted. The closure plan will clarify that the 303-K Facility closure strategy will be clean closure. Portions of the facility (building and concrete floor) that are found to be contaminated with dangerous waste residue will be decontaminated or removed.** Ecology Response No. 1 (Rev. 1): With the issuance of the SCR, DOE/WHC must decide on the probable closure approach for the 303-R unit. The SCR will have a widespread impact on this closure plan, and all sections that are affected must be modified to comply with the particular closure option chosen, and the SCR. If more than one option is chosen, or a change is made in the closure approach after sampling, the additional required elements of the closure plan must be submitted to Ecology for approval and incorporation. **DOE-RL/WHC Response No. 2: The position of DOE-RL and WHC remains the same on this comment. Applying an option from the Soil Cleanup Policy issued by Ecology to the closure plan would be inappropriate because it is the opinion of DOE-RL and WHC that the Soil Cleanup Policy issued by Ecology is not ready for implementation (see DOE-RL letter to Ecology dated April 3, 1992, letter number 9202380). The approaches or methods used to develop numerical cleanup standards were not based on well founded scientific principles or evidence. The numerical standards chosen in the policy are below the Model Toxics Control Act (MTCA) soil cleanup standards, which are conservative and were adopted after a comprehensive rule adoption process. Ecology provides no consistent or technically defensible basis for defining the concentration levels in the policy.**	Ecology letter of November 6, 1990

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Before any soil cleanup option could be chosen, integration with the Record of Decision (ROD) for the soil cleanup of the Operable Unit (300-FF-3) would have to be accomplished. One of the main purposes of the Tri-Party Agreement was to integrate RCRA and CERCLA activities. These activities include soil cleanup standards as well as the physical remediation of the site (if necessary). According to the Tri-Party Agreement ".... a procedure to coordinate the TSD unit closure or permitting activity is necessary to prevent overlap and duplication of work, thereby economically and efficiently addressing the contamination." It is the position of DOE-RL and WHC that the most logical, cost effective, efficient integration of RCRA and CERCLA in the 300 Area is to conduct all soil remediation, RCRA and CERCLA, at the same time and to the same cleanup standards.

If the closure plan is changed after approval, the requirements for amending the plan, listed in WAC 173-303-610, will be followed.

2. Page 1-10. The owner/operator certification was not signed upon receipt of this document by Ecology. Ecology will not accept future closure plans or permit applications which do not contain a signed certification. Further, Ecology will return the document(s) and any associated milestone will be considered missed. — Ecology letter of November 6, 1990

DOE-RL/WHC Response: A signed copy of the Part A permit application will be provided. Also the Part A permit application will be moved from Chapter 1.0 to a separate section similar to Part B permit applications.

3. Page 2-3, Figure 2-2. The 300 Area site map does not give an adequate site plan per WAC 173-303. — Ecology letter of April 23, 1992

Ecology Requirement: Provide a site map which meets the requirements of WAC 173-303. A checklist is enclosed that outlines the requirements.

DOE-RL/WHC Response No. 1: The extensive maps required in Part B permit applications [WAC 173-303-806(4)(a)] are not required in closure plans. If Figure 2-2 is not adequate for a specific reason, additional information will be added to the figure.

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Ecology Response No. 1: The DOE-RL/WHC states that additional maps will be provided if a specific request is made.

Ecology Requirement: Maps which delineate the waste management areas, and describe and illustrate the land uses in the immediate area (i.e., what are the nearby buildings, etc.) must be included in the next revision of the closure plan.

DOE-RL/WHC Response No. 2: Figure 2-3 shows the ground cover and facilities surrounding the 303-K Facility and will be included in the closure plan.

4. Page 2-1. The facility description is not clear as to the extent of modifications to the facility (i.e., dates when new asphalt was added, when additional lifts of concrete were added, etc.). — Ecology letter of April 23, 1992

Ecology Requirement: A more detailed description of the facility must be provided.

DOE-RL/WHC Response No. 1: The approximate dates for the various additional asphalt and concrete pads will be shown in a drawing.

DOE-RL/WHC Response No. 2: Figure 2-4 shows the dates when the various modifications to the 303-K Facility took place. This figure and additional text to introduce the figure will be added to the closure plan.
Ecology Response No. 1: The drawing is confusing. At the next unit manager's meeting, provide a replacement drawing for attachment 1. The various modifications to the unit must be clearly delineated and it must include a key and appropriate legend.

DOE-RL/WHC Response No. 3: The dates that were shown in Figure 2-4 have been removed and are now shown in a new drawing (Figure 2-5).

5. Page 3-2, line 23. There is not an adequate description (including drawings) of the exhaust system. — Ecology letter of November 6, 1990

Ecology Requirement: Include an accurate description of the exhaust system, including point of emission with a wind rose to show prevalent wind direction. The description of

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the system should also discuss the throughput of the exhaust system as well as the efficiency. Include any available design drawings of this system.

DOE-RL/WHC Response: The following information will be included in the text: The 303-K North Room originally had one electric powered roof fan. The size is unknown. The fan may have been used from 1953 to 1977 while decontaminating aluminum spacers and equipment; however, weather permitting, the north sliding room door was generally open for material transfer while decontaminating.

The roof vent fan was replaced with the HEPA exhaust system in 1977 and was used until the fall of 1982. It was only turned on at the end of the curing operation to help remove the hot air or if hydrogen levels indicated that a billet fire had occurred. The flow rate is unknown. There are no records of the HEPA filter efficiency tests. This was only a temporary system and no design drawings are known to exist. This exhaust system has not been used since the concrete curing operation was discontinued.

6. Page 3-2, line 34. The process sewer discharge is not adequately described.

Ecology letter of April 23, 1992

Ecology Requirement: Give a further discussion on the process sewer including estimated volumes (if available) discharged to the process sewer from this facility.

DOE-RL/WHC Response No. 1: Until March 1985, all waste liquid chemicals in the fuels operation were discharged to the process sewer that entered the North or South Ponds. Thus, during the aluminum spacer decontamination operation from 1953 to 1971, the chemicals and contaminates would have entered the process sewer. Discharges would have been from two sinks, a wash table, and the floor trench. Flow rates are unknown.

The chemicals used during the decontamination will be included in two new tables.

During the concretion curing operation from 1977 to 1982, steam condensate, Building 3707-G sink and water fountain drain, and any cleanup water would have entered the process sewer via the floor trench drain. Flow rates are unknown.

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After 1982, the only known liquid discharge was steam condensate until the steam was shut off and the floor trench drain was plugged in 1988.

Surface run-off from precipitation entered the process sewer through the drain on the north concrete pad from 1953 until sealed in 1989.

There are no radiation detectors or sampling station on the process sewer from the 303-K Facility. This was done a the outflow from the combined 300 Area process sewer system.

The 303-K Building process sewer system will be included in a drawing and the text will be revised accordingly.

Ecology Response No. 1: The DOE-RL/WHC discussion, along with the proposed new tables and drawings, will provide the information requested by Ecology.

Ecology Requirement: Revise the text of the closure plan to include the discussion provided in this response.

DOE-RL/WHC Response No. 2: This information was added to Section 2.2 of the closure plan.

7. Page 4-1, line 16. The waste receiving procedures are not adequately defined. — Ecology letter of April 23, 1992

Ecology Requirement: Give a detailed discussion on the procedures used for acceptance of waste at the 303-K Facility. This must include any documentation available on verification of types of waste received at the unit. In other words, can it be verified that the waste identified in Table 4-1 are the only wastes sent to the unit, and if so, how?

DOE-RL/WHC Response No. 1: There were no detailed procedures used for acceptance of waste at the 303-K Facility since this facility serviced known manufacturing processes with known waste byproducts. All wastes and contaminated equipment from radiation areas or suspected to contain uranium were sent to the 303-K Facility. Most waste drums were sampled prior to transfer to the 303-K Facility although the analysis was not always received prior to moving to the 303-K Facility. A few drums were sampled after they were received in the

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303-K Facility. These analyses were performed primarily to determine the content of uranium for accountability purposes or to determine if the radioactivity was naturally occurring. Wastes determined to contain *de minimis* quantities of uranium or natural occurring radioisotopes were moved to the 333 East Pad until proper permits were obtained and the waste was transferred out in less than 90 days. Records from 1987 to present are available at fuels operation for review to substantiate the waste codes contained in the RCRA Part A permit application.

Ecology Response No. 1: The information presented is not adequate for documenting that Table 4-1 covers all wastes sent to the unit.

Ecology Requirement: Edit the text and legend regarding this table to indicate it is not comprehensive. In addition, incorporate the text presented in the closure plan.

DOE-RL/WHC Response No. 2: A new table 4-2 will be includ d in Chapter 4.0 showing the constituents used and stored in the 303-K Facility during the radioactive decontamination of equipment from 1953 to 1977. These materials do not have MSDS available, however, a chemical analysis was conducted on these materials and is shown in Table 4-3. The chemicals shown in Table 4-2 were disposed of in the 183-H Basins.

Ecology Response No. 2: There still is some difficulty with these tables. For example, Tables 4.2 and 4.3 both indicate that caustic materials are a concern but this is not reflected in the "comprehensive" Table 4.1 which lists "Acid" but not "Base" or "Caustic" as a concern. Delete claims that Table 4.1 is comprehensive. See number 12 for a discussion of the Nuclear and Mixed Waste Management Program (N&MWMP) closure policy under development; this will impact the applicability of these tables.

DOE-RL/WHC Response No. 3: Table 4-1 lists all the constituents stored at the 303-K Facility since it became a storage facility in 1986. Table 4-2 lists the constituents that were in the 303-K Facility prior to its use for curing concreted billets of recyclable scrap uranium chips and fines. The 303-K Facility was cleaned and all constituents removed in 1977 before the facility was used to cure billets.

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8.	Page 4-1, line 30. Only a brief description of the billet fires are included in this document. The detail given is not adequate to evaluate these incidents. Ecology Requirement: Include copies of any Unusual Occurrence Reports or other documentation related to the billet fire incidents. **DOE-RL/WHC Response: The 14 billets that burned during the testing program were mixed with unburned chips and reconcreted. This information is detailed in UNI-1454 and will be included as an appendix in the closure plan.** **Details of the March 13, 1982, fire are included in the Occurrence Report 82-05 and will be included as an appendix in the closure plan. Air samples and radiation surveys taken in the general area indicated no contamination release. A small amount of uranium oxides and copper oxide may have entered the process sewer during cleanup work. The burned debris was drummed, mixed with unburned chips, and reconcreted. No detailed job specific decontamination procedures were used in 1982 and only radiation measuring instruments would have been used during decontamination. The text will be modified to refer to the appendices mentioned previously.**	Ecology letter of November 6, 1990
9.	Page 4-1, line 34. This section mentions that a decontamination effort was accomplished following the March 12, 1982, billet fire. Further, the text states that the uranium oxide, copper oxide, and zirconium oxide formed from the burning billets were removed. These statements are not substantiated. Ecology Requirement: Include the detailed decontamination procedures used for this effort. Also, include all supporting information generated (including analytical data) in support of the decontamination effort. **DOE-RL/WHC Response: See response number 8.**	Ecology letter of November 6, 1990
10.	Page 6-1, line 7. The closure strategy states that "... constituents originating from the 303-K Facility...". This statement is not clear. Further, this is not consistent with the background closure requirement in WAC 173-303-610.	Ecology letter of November 6, 1990

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Ecology Requirement: Clarify the statement to read "... all constituents originating at the 303-K Facility, regardless of the origin, will be cleaned to background.

DOE-RL/WHC Response: The statement will be revised to read "... constituents stored or used in the 303-K Facility..."

11. Page 6-1, line 12. The text states that if the facility cannot be cleaned to human health standards (refer to comment number 10), then the building will be evaluated and/or removed from service when the 300-FF-3 Operable Unit activities are conducted. This is not adequate. — Ecology letter of November 6, 1990

Ecology Requirement: All remediation activities associated with the 303-K Building must be accomplished via the closure plan. This includes potential demolition of the site (refer to comment number 1).

DOE-RL/WHC Response: The south side of this building will still be in service after closure of the north side. For this reason, the south side of the building cannot be removed. However, portions of the north side, which are found to be contaminated with dangerous waste residue will be decontaminated or removed. See response number 1.

12. Page 6-1, line 24. The text states the closure performance standard will be a health based standard. This is not appropriate. — UMM of November 17, 1993

Ecology Requirement: The closure standard for this facility will be background. All other citations of health based standards must be changed to background.

DOE-RL/WHC Response No. 1: A clearer definition of baseline and action levels in relationship to clean closure will be provided. The following paragraphs will be included in Chapter 6.0 of the closure plan. In addition, a flow chart showing the general closure strategy will be added.

"Three important terms in the following information on the 303-K Facility closure strategy are 'baseline,' 'baseline threshold,' and 'action levels.' Baseline is the set of analytical results of the local background samples. Baseline, therefore, refers to the

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population of constituent concentrations in the soil or building materials in the vicinity of the 303-K Facility that are not attributable to the 303-K Facility operations. Baseline threshold refers to concentrations that define an upper limit of the baseline population and is not to be confused with the average baseline concentration. Baseline threshold concentrations will be determined by statistical methods such as those described in *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance* (EPA 1989), e.g., the tolerance interval approach to the analysis of variance. Action levels are the constituent concentration levels that will prompt an action of some type. These actions would include additional evaluation, cleanup, or deferral to the CERCLA process. Action level values include concentrations based on risk to human health and the environment, baseline threshold concentrations, or other appropriate cleanup criteria.

Clean closure will be accomplished by demonstrating that the constituents used in the 303-K Facility operations are not present above action levels. Reevaluation of the action levels will be considered if one or more of the action levels are exceeded by any of the compliance constituents listed in the table located in Section 7.3.2.2. This measure is proposed because contaminant concentrations for soil and concrete may exceed an action level; however, the concentrations may be significantly below any health or environmentally-based risk level. Any additional evaluation would be based on the following.

- The type and extent to which action levels are exceeded.
- The further assessment of health-based risk using toxicity criteria guidance such as the *EPA Integrated Risk Information System* (IRIS) database (EPA 1989b), the *Human Health Evaluation Manual* (EPA 1989a), the *Technical Information Memorandum* (TIM) No. 86-1 (Ecology 1986), and other appropriate information.

If dangerous constituents are determined to exist in concentrations above action levels and reevaluation of action levels is not warranted, remediation of the soil will be evaluated under the CERCLA RI/FS process for the 300-FF-3 Operable Unit. Initial action levels for the constituents in the soil samples will be the baseline threshold values."

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Baseline samples will be obtained within the 300-FF-3 Operable Unit.

An exposure scenario method, like the one provided for 2101-M Pond Closure Plan, will be used for the 303-K Facility Closure Plan. The actual analysis for the exposure scenario will be conducted when sample analyses are obtained. The scenario will provide the criteria for comparing element concentrations to the risk to human health and the environment. These factors will then be evaluated for clean closure.

Ecology Response No. 1: The DOE-RL/WHC propose to include a number of paragraphs within the text in order to clarify the definitions of "baseline," "baseline threshold," and "action level." Any terms not defined should be defined in a section for acronyms, abbreviations, and definitions similar to that provided in Part B permit applications. How these concepts will be used in developing the cleanup strategy to be implemented after obtaining the results of the sampling and analysis at the unit should be provided in both the form of a narrative and flow chart in the appropriate sections of the closure plan. Ascertain whether or not these terms are appropriate within the requirements of Chapter 173-303 WAC, see the next paragraph for guidance.

The proposed test and clean closure objectives are not acceptable. The original requirement in Ecology's NOD stated that the closure standard for this facility will be background. From DOE-RL/WHC's response, it appears that clarification of this comment is necessary. Under WAC 173-303-610(2)(b), closure performance standard, the levels of dangerous waste or dangerous waste constituents or residues remaining after closure of a unit may not exceed background environmental levels or designation limits for clean closure. If these performance standards cannot be met, then the unit is subject to subsections (7) through (11) of WAC 173-303-610. Refer to WAC 173-303-610 for guidance.

The approach for the soil cleanup is unacceptable. The soil must be cleaned to at least area background levels (area background is defined in WAC 173-340-200), not baseline. A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared.

Ecology Requirement: Compliance with the above is required.

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DOE-RL/WHC Response No. 2: The terms "baseline" and "baseline threshold" will be replaced with the terms "local background" and "local background threshold." These terms and the term "action levels" will be included in the List of Terms section of the closure plan and defined as follows:

- Local background--The data set of chemical concentrations from samples obtained in the local vicinity of a facility. Samples within the facility will be compared to the local background data set to determine the presence or absence of contamination from the facility. In this case, the samples to determine the local background concentrations would be obtained withi.. the 300-FF-3 Operable Unit.

- Local background threshold--Refers to the concentrations that define an upper limit of the local background population. It is not an average local background concentration. It is determined statistically (e.g., the tolerance interval approach to the analysis of variance).

- Action levels--Chemical concentration levels that will prompt an action. Action level values will commonly be local background threshold concentrations and health and environmental based concentrations.

To facilitate closure, the 303-K Facility will be viewed as consisting of three components; the building, the floors and pads (concrete and asphalt), and the soil. These three components will be evaluated separately for closure of the facility. The building, concrete floor, and the concrete and asphalt pads will be decontaminated to TCLP regulatory levels or removed.

With the exception of an imminent danger, all necessary soil remediation will be accomplished under the CERCLA RI/FS process. If the soil within the 303-K Facility boundary is found to be contaminated (chemical concentrations above local background threshold and health based standards) from operations conducted (chemicals used or waste stored) in the 303-K Facility, the facility will not be considered closed until the remediation under CERCLA is complete. However, if chemical concentrations are below the local background threshold and health based standards, the 303-K Facility will be considered closed. As described in the Tri-Party Agreement, any source contamination in

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the soil from past operations (such as manufacturing fuel rods) in the 300 Area, will be evaluated and remediated under the CERCLA RI/FS process. Methods used to determine chemical concentrations for health based standards will be scientifically and technically defensible, e.g., the Model Toxic Control Act, WAC 173-340.

The paragraph starting with line 32 on page 6-1 will be changed as follows:

"If the concentration of any constituent identified in Chapter 7.0, Table 7-1, is above the initial action level (local background threshold), the action level will be reevaluated. This measure is proposed because contaminate concentrations for soil which may exceed an action level, may also be below any health or environmental-based risk level. Any additional evaluation would be based on 1) the type and extent to which the action levels are exceeded, and 2) assessment of health-based risk. Health-based risk standards will be scientifically and technically defensible and criteria guidance will be used such as the Model Toxic Control Act, WAC 173-340 (Ecology 1990), the EPA IRIS database (EPA 1989b), the Human Health Evaluation Manual (EPA 1989a), and other appropriate information. If dangerous constituents are determined to exist in the soil in concentrations above action levels, closure for the soil will be complete after the remediation of the 300-FF-3 Operable Unit under the CERCLA RI/FS process. With the exception of imminent hazard, all soil remediation will take place under the CERCLA RI/FS process for the 300-FF-3 Operable Unit."

The flow chart (Figure 6-1) shows the closure strategy for the 303-K Facility.

Section 8.2, Postclosure Care, in the 303-K Facility closure plan will contain the following text.

"Postclosure care is generally required when a waste management facility cannot attain clean closure. At the 303-K Facility, underlying soils and groundwater may have been contaminated by waste generated during operations in the 300 Area. Under the Tri-Party Agreement, source contamination and groundwater will be investigated and remediated through the operable units under the CERCLA RI/FS process.

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With the exception of an imminent health threat, all soil remediation will take place under the CERCLA RI/FS process. If the soil within the 303-K Facility boundary is found to be contaminated (chemical concentrations above local background threshold and health based standards) from operations conducted (chemicals used or waste stored) in the 303-K Facility, the facility will not be considered closed until the remediation under CERCLA is complete. During the time between closure of the building, floor, and pads and any soil remediation under CERCLA, steps will be taken to isolate any contamination.

Any data obtained from sampling and analyses during RCRA closure activities will be part of the record and included in the closure plan. This data will be taken into account and used during the CERCLA evaluation of the 300-FF-3 Operable Unit, as well as data collected specifically for the CERCLA evaluation.

Temporary covers will be installed, if necessary, to prevent migration of any contamination. The temporary covers would be less permeable than the surrounding soil and may be composed of constituents such as asphalt, clay, or a fixative spray. The existing facility floor and pads may be used as covers if they were found to be uncontaminated or were decontaminated. The exact nature of any covers would be determined at the time the need was identified and this information would be added to the closure plan. In addition, access to the areas of contamination would be controlled if necessary to protect personnel or prevent the migration of contamination.

During the period between closure and soil remediation under CERCLA, the facility area would be inspected at a minimum of once a week. This inspection would be combined with facility inspections presently conducted. The inspections would determine the need for maintenance of any temporary covers or other physical barriers. Any required maintenance would be performed by trained personnel from the Hanford Site."

Ecology Response No. 2: Ecology is developing a policy for soil closure standards. It is anticipated that this policy will impact the proposals made by USDOE/WHC. In keeping with the Tri-Party Agreement, an integral part of this policy will be the goal of only one remediation at any unit; i.e., it will not be acceptable to postpone any part of the closure activities to the 300-FF-3 Operable Unit response. This will not preclude future

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remediation activities during the postclosure period. This closure policy will be made available to USDOE/WHC as soon as possible.

DOE-RL/WHC Response No. 3: Due to the delay in the release of the policy on soil closure standards being developed by Ecology, our position on these comments remain essentially the same.

With the exception of an imminent health threat, it is still the position of DOE-RL and WHC to defer all soil remediation (if needed) to the CERCLA RI/FS remediation process. Deferring soil remediation to the CERCLA process would make any remediation more efficient and would avoid the possibility of cleaning a small area twice. If a larger area was being remediated, which extended around a smaller area that was previously remediated, the remediation could be very inefficient. One of the main purposes of the Tri-Party Agreement was to integrate RCRA and CERCLA activities. According to the Tri-Party Agreement ".... a procedure to coordinate the TSD unit closure or permitting activity is necessary to prevent overlap and duplication of work, thereby economically and efficiently addressing the contamination."

Ecology Response No. 3 (Rev. 1): This section must be revised to reflect the standards in the SCR policy. In particular, the 303-K closure standards will be either background, landfill standards, or the modified landfill standards and constituent concentrations found in the table of the SCR.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC Response No. 2, for comment number 1.

13. Page 6-1, line 32. In relation to the closure performance standard that will be applied at this unit (see comment number 12), this paragraph is not appropriate. — Ecology letter of November 6, 1990

Ecology Requirement: Remove this paragraph from the closure plan.

DOE-RL/WHC Response: The paragraph will be removed.

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14.	Page 6-2, line 1. The concept of "baseline concentrations" is neither appropriate nor acceptable for a clean closure performance standard. This discussion should be directed towards a determination of background. Baseline concentrations are appropriate to use for an interim cleanup level for soils prior to the 300-FF-3 Operable Unit investigation. Baseline may only be used for soils and the soils must be remediated to the baseline level via implementation of this closure plan. Ecology Requirement: Rewrite this discussion to include background as the clean closure performance standard. The text should also be rewritten as appropriate to incorporate the concept of baseline as outlined previously. Refer to the 300 Area Solvent Evaporator (ASE) Closure Plan for further guidance. **DOE-RL/WHC Response No. 1: A definition of baseline will be added for clarification (see response number 12). However, the baseline (local background) will be used to determine if the soil, concrete floors and pad, and asphalt pads can be clean closed.** **Concrete slabs could have wide variations in concentrations of inorganic elements, depending where the cement and aggregate were obtained. Because of the potential for wide variations, a concrete background sample must be taken from the same pour.** **A concrete background sample will be obtained by taking a core of the concrete slab in an area where contamination is least likely and away from cracks or other potential pathways. The concrete slabs are approximately 6 inches thick. The core will be cut into four equal sections perpendicular to the core and analyzed. The analytical results from each section will be compared to determine the baseline for the concrete slab.** **The center and lower portion of a 6-inch concrete slab would not be contaminated from the operations conducted in the 303-K Facility even if the surface was contaminated by some method (i.e., spill), unless a pathway or crack existed. The contamination assessment conducted for the 300 ASE closure plan indicated that water with solvents would not penetrate the concrete more than 3/8 inch, and TCE and PCE no more than 2 millimeters under the scenario outlined. The scenario would be worse than a worse-case scenario in the 303-K Facility. This information will be included in the text.**	UMM of November 17, 1993

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Ecology Response No. 1: The DOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background concrete contamination levels. This is not acceptable.

Ecology Requirement: Concrete samples from areas not subject to contamination must be used for establishing background concrete contamination values.

DOE-RL/WHC Response No. 2: Although the original proposal for obtaining background samples is valid, there may be problems in ensuring representative samples due to the aggregate in the concrete and in the number of samples necessary for statistical validity. An appropriate alternative method may be the Toxicity Characteristic Leaching Procedure (TCLP) to demonstrate the concentrations of constituents in the concrete are below regulatory concern, i.e., if they are below the TCLP regulatory limits, they are not deleterious to the environment or human health. The advantages to this approach would be the use of established procedures, fewer samples, less impact on the facility, and less uncertainty in the results.

Ecology Response No. 2: This approach is too narrow in scope; the designation procedure delineated under WAC 173-303-070 must be followed for clean closure.

DOE-RL/WHC Response No. 3: The position of DOE-RL and WHC remains essentially the same. This issue will require further discussion.

Ecology Response No. 3 (Rev. 1): In order to expedite the determination of background values for concrete, Ecology is requiring that core samples of the roof in the south half of the building be taken. This location was chosen because it was not impacted by past practices, and it is reasonable to expect that it is composed of the same cement, sand, and aggregate mixture as the rest of the 303-K building. Pour core samples must be drilled, with the center inch of the core sliced out, the aggregate removed, and the resulting sand/cement mixture analyzed. This approach will ensure statistical validity of the data, and that variations due to the aggregate will be minimized or eliminated. The technical details of this procedure will be discussed at future unit manager meetings.

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DOE-RL/WHC Response No. 4: There is no guarantee that the concrete in the roof contains cement, sand, or aggregate from the same sources as the rest of the building and pads. The concrete for the roof could have been poured months after the floor was poured. In addition, this would not serve as background for the concrete pad which was poured ten years later. DOE-RL and WHC still maintain the best method for determining if the concrete is contaminated by constituents stored or used in the building is to use the TCLP extraction method for the reasons stated below.

Concrete at the Hanford Site can have wide variations in concentrations of inorganic elements, depending where the cement, sand, and aggregate were obtained and the amount of each used. The concentrations of the inorganic elements could vary as much or more (depending on the source of the cement, sand, and aggregate) as the concentrations found in sitewide background study for soil. Because of the potential for these wide variations, any concrete background samples must be obtained from the same pour as the concrete to be sampled for contamination. If background samples cannot be obtained from the same pour, an analytical method must be used that will reduce the possibility of extracting constituents from the aggregate and sand (i.e., dissolving part of the aggregate and sand). In addition there can be problems in ensuring representative concrete background samples due to the size and amount of the aggregate present and obtaining enough samples necessary for statistical validity. For these reasons the TCLP extraction method is the preferable method to be used on concrete samples for inorganic constituents.

The TCLP analytical method is designed for measuring the concentrations of constituents introduced or mobilized into the environment and is not as likely to extract elements from the aggregate and sand as will the aggressive 3050 (SW-846) extraction method.

The TCLP extraction method has the advantages of an established procedure, less likely to leach elements from the sand and aggregate, less uncertainty in the results, fewer samples, less impact on the facility, and the potential for generating less waste. The TCLP extraction method will also help eliminate the problem of erroneous designation resulting from the 3050 extraction method (e.g. essentially all soils will designate in accordance with the present designation criteria due to trace amounts of naturally occurring elements such as arsenic and lead).

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15.	Page 6-2, line 44. The term "baseline" is not appropriate for this discussion. Ecology Requirement: Change "baseline" to "background." **DOE-RL/WHC Response: See response numbers 12 and 14.**	Ecology letter of November 6, 1990
16.	Pages 6-3/6-4, Figure 6-1. Although the logic behind this flow chart is appropriate, the performance standard associated with the decision points is not appropriate (refer to comment numbers 1 and 12). Ecology Requirement: Redo the flow chart to show the appropriate closure standards. **DOE-RL/WHC Response No. 1: Another flow chart will be included to show general closure strategy. See response numbers 1, 12, and 14.** **DOE-RL/WHC Response No. 2: The flow chart in Figure 6-1 has been revised.** Ecology Response No. 1: The flowchart is acceptable but will probably require some revision to accommodate the closure policy currently under development. It must be properly identifies in a legend. See number 12. **DOE-RL/WHC Response No. 3: Due to the delay in the release of the policy on soil closure standards being developed by Ecology, our position on these comments remain essentially the same.** Ecology Response No. 2 (Rev. 1): This flow chart must be modified to reflect the closure path chosen for the 303-K unit, in accordance with the SCR. For example, the soil background levels box is not consistent with the SCR, since the SCR does not utilize local background levels. If two or more of the options under the SCR are chosen, each must either adhere to the flow chart, as modified, or each option must have its own flow chart. **DOE-RL/WHC Response No. 4: See DOE-RL/WHC Response No. 2, for comment number 1.**	UMM of November 17, 1993

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	It is still the position of DOE-RL and WHC that a TSD unit is only responsible for the constituents managed at that particular unit. This is substantiated by WAC 173-303-610(2)(b)(i) and (ii). Due to the potential for wide spread contamination in the 300 Area from past practice operations, such as fuel fabrication, it would be inappropriate to use site-wide background (which excluded the 300 Area) for comparison to samples from the 300 Area. Any general contamination would be from past practice operations and remediated with the 300-FF-3 operable unit. For these reasons local background is appropriate for TSD facilities in the 300 Area.	
17.	Page 6-5, line 15. The statement that soil remediation will occur under the CERCLA process is premature. This decision will be made after evaluation of the sampling and analysis effort from the facility. Ecology Requirement: Change the text accordingly. **DOE-RL/WHC Response No. 1: The text will be revised to read "The decision on remediation of soil (clean to baseline or defer to CERCLA) will be made after sample analyses are obtained and evaluated."** Ecology Response No. 1: The DOE-RL/WHC propose to revise the text to, "The decision on remediation of soil (clean to baseline or defer to CERCLA)..." Ecology Requirement: The soils must be remediated to at least area background contamination levels. See comment number 12. **DOE-RL/WHC Response No. 2: With the exception of an imminent danger, all necessary soil remediation will be accomplished under the CERCLA RI/FS process. See response number 12.** Ecology Response No. 2: Compliance with the N&MWMP closure policy will be required. See number 12. **DOE-RL/WHC Response No. 3: Due to the delay in the release of the policy on soil closure standards being developed by Ecology, our position on these comments remain essentially the same.**	UMM of November 17, 1993

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Ecology Response No. 3 (Rev. 1): The language in this section must be changed in accordance with the closure option pursued at the 303-K unit. Much of the language in this section of the closure plan must be modified to adhere to the SCR.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC Response No. 2, for comment number 1.

18. Page 6-5, line 29. The text states that two official copies of the final approved plan will be kept at the DOE-RL. This is appropriate, however, Ecology and EPA must also have an 'official copy' of the plan. Copies of the plan must also be kept at the site (303-K Facility) and the information repositories identified in the Tri-Party Agreement. — Ecology letter of November 6, 1990

Ecology Requirement: Amend the plan accordingly.

DOE-RL/WHC Response: The text will be revised to read "Official copies of the closure plan will be kept by the DOE-RL, Ecology, EPA, Administrative Record Center, facility manager's office in the 313 Building, and at the 303-K Facility site."

19. Page 6-5, line 33. The text states that the DOE-RL will be responsible for amending the plan as necessary. No mention was made of the formal procedure for amending the approved closure plan. — Ecology letter of November 6, 1990

Ecology Requirement: Correct this oversight by referring to the appropriate amendment procedure identified in WAC 173-303-610.

DOE-RL/WHC Response: The text will be revised to include a reference to WAC 173-303-610(3) for amending the closure plan.

20. Page 6-6, line 9. Inappropriate closure standards are identified. — Ecology letter of November 6, 1990

Ecology Requirement: Change the language to be consistent with the required closure performance standard (see comment number 12).

DOE-RL/WHC Response: See response numbers 1, 12, and 14.

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21.	Page 7-1, line 12. The text states that once closure activities begin, the waste inventory will be transferred to other sites on the Hanford Site. The text does not specify the locations or timing of this transfer. Ecology Requirement: Specify the exact locations to which waste will be transferred and the timing of the transfer. **DOE-RL/WHC Response No. 1: The text will be revised to read "After the closure plan is approved, containerized dangerous waste stored for more than 90 days will be transferred to the Central Waste Complex. This transfer will take place before initiation of the sampling plan."** Ecology Response No. 1: The DOE-RL/WHC propose a text revision to state, "... waste stored more than 90 days will be transferred..." This does not give all the information requested in the original comment. It is unacceptable to have dangerous waste stored in the same location in which closure activities are taking place. Ecology Requirement: Specify the locations where waste will be transferred and the timing of the transfer for all waste stored at the unit, including waste stored less than 90 days. **DOE-RL/WHC Response No. 2: The text will be revised to read "After the closure plan is approved and prior to any other closure activities, all waste stored at the 303-K Facility will be transferred to the Central Waste Complex for interim storage and future treatment or disposal."**	Ecology letter of April 26, 1991
22.	Page 7-1, line 35. The text states the proposed timing of closure activities and the integration with the 300-FF-3 Operable Unit. This is not appropriate. Ecology Requirement: The closure standard for this facility will be background. All other citations of health based standards must be changed to background. **DOE-RL/WHC Response: The text will be revised in accordance with the information provided in response numbers 1, 12, and 14.**	Ecology letter of November 6, 1990

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23.	Page 7-3, line 7. The text states that test methods used in the sampling and analysis plan will be "equivalent" to SW-846. This statement is not appropriate. The sampling and analysis plan must use the exact methods identified in SW-846. Only specific test variations which are approved by Ecology are acceptable. Ecology Requirement: Specify the tests to be used will be those in SW-846. Further, identify the exact test methods to be used. Should DOE wish to use alternate test methods, follow the procedures outlined in WAC 173-303-910. **DOE-RL/WHC Response No. 1: A table will be prepared indicating the methods to be used. Deviations from these methods will be fully described in the closure plan for review by Ecology.** Ecology Response No. 1: The DOE-RL/WHC will describe any deviations from required test methods. Ecology Requirement: Procedures for any test method which deviates from required test methods must be submitted to Ecology with a request for approval of the substitute method. **DOE-RL/WHC Response No. 2: Table 7-1 was revised to include analytical test methods.** Ecology Response No. 2: The revised table has some mistakes. For example, the analytical method referenced for measurement of chloride in soils is SW-846, 7000, yet this test does not measure chloride. Correct the errors in this table and resubmit it for Ecology approval. **DOE-RL/WHC Response No. 3: Table 7-1 has been revised. The revised table is in revision 1 of the closure plan.** Ecology Response No. 3 (Rev. 1): The methods listed in Table 7-1 have some problems associated with them. Namely, there is a SW-846 method for chloride analysis, but the listed method is an EPA Method 300.00. Why was this method chosen over the SW-846 method? Why was SW-846 method 7061 chosen over 7060, knowing that chromium, nickel, mercury, and silver may be present? For mercury, SW-846 method 7471 may be more appropriate than 7470	UMM of November 17, 1993

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for soil samples. Also, there is a typo on line 14, EPA is misspelled as EAP. Please review this table and provide the justifications for using the methods above, and correct the typographical errors. Ecology must approve any alternative method that is not listed in WAC 173-303-110.

DOE-RL/WHC Response No. 4: At this time there is no SW-846 method for nitrite. The EPA method 300.0 was chosen because that method can determine all three of the anions planned for analysis (chloride, nitrate, and nitrite). If Ecology prefers SW-846 method 9250 could be used for chloride, SW-846 method 9200 for nitrate, and EPA method 300.0 for nitrite. However, this may not be the best alternative.

The SW-846 method 7061 for arsenic will be changed to SW-846 method 7060. The SW-846 method 7470 for mercury will be changed to SW-846 method 7471.

The typographical error has been corrected.

24. Page 7-3, line 11. The text states that soil sampling will occur to a depth no deeper than 1 foot. There is no valid justification for this procedure (refer to comment number 32). Further, the constituents found at the 303-K Facility (particularly organic contaminants) have the ability to migrate to depths beyond 1 foot.

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Ecology Requirement: Change this statement to include a more adequate soil sampling program. A 1-Foot sampling depth will not be accepted.

DOE-RL/WHC Response No. 1: Information to date suggests any potential organic or inorganic contamination from the 303-K Facility would be located in the uppermost part of the soil column. However, the soil sampling depth will be reevaluated using contamination scenarios and assessments similar to those presented in the 2101-M Pond Closure Plan. The objective of these assessments will be to determine the most likely location of any potential contamination from this facility in the soil column. The information will be presented and discussed with Ecology in a future unit managers meeting.

Ecology Response No. 1: Development of a soil sampling plan based on the 300 ASE is inappropriate; the 300 ASE is located on top of a burial ground.

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Ecology Requirement: The soil sampling plan must address vadose zone contamination at this unit. Refer to the 2101-M Pond Closure Plan in development for guidance.

DOE-RL/WHC Response No. 2: The previous response referencing the 300 ASE closure plan was in error. The reference should have been to the 2101-M Pond Closure Plan.

It can be shown that concentrations of inorganic constituents added to the soil by sorption from an effluent containing even drinking water levels of these constituents are greatest in the upper few millimeters, and decreases with increased thickness of the soil column. Due to the well known process of sorption (Conway 1982, Freeze and Cherry 1979, CRC 1984), any contamination remaining in the soil would be the result of equilibrium reactions and/or irreversible sorption. In either case, residual contamination would be most concentrated in the uppermost part of the soil column, with rapidly decreasing concentrations downward. Therefore, the uppermost part of the soil column is most likely to contain contamination if it is present.

It is also indicated that any contamination of the soil by organic solvents associated with the facility is likely to be small and, if present, dominate in the uppermost part of the soil column. The only pathway for the organic contaminate to the soil would have involved the transport of a very small fraction of any spill (no spills were reported) to the soil through cracks in the concrete floor. Due to the relatively small amount of potential contamination, the general lack of evaporation under the concrete floor, and the tendency for such small amounts to be retained in the soil, any potential organic contamination from this source is most likely to be present in the upper part of the soil column.

Because the potential contamination from the 303-K Facility would remain in the upper part of the soil column, a maximum sampling depth of two feet would be adequate. During soil sampling, a sample will be obtained at the surface, at one foot, and two feet.

Ecology Response No. 2: While it is correct that sorbed contaminants would be expected to be in the uppermost layer, assuming that all contaminants will sorb is not correct. See, for example, Freeze and Cherry 1979 or W. B. Mills et al., Journal of Association of Ground Water Scientists and Engineers, March-April 1991.

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Samples must be taken at the soil-concrete and soil-asphalt interfaces, one foot, two feet, and three feet depths. The closure plan must describe the sampling methods, sample sized, and analytical methods to be taken in the event contamination is detected. The closure plan must have detailed the event contamination is detected. The closure plan must have detailed the event contamination is detected. The closure plan must have detailed provisions for further actions if contamination is detected at three feet (the lowest horizon). This contingency must be provided for in the scheduling of the closure activities. In other words, the closure plan must have contingency plans (including scheduling) for sampling to and removal/remediation of contamination at depths greater than the initial soil sampling. In addition, all phases of the closure activities must occur in a timely fashion (including any resampling and removal/remediation necessary).

DOE-RL/WHC Response No. 3: The soil sampling for the 304 Concretion Facility Closure Plan now states samples will be taken at the surface, one ft, 2 ft, and 3 ft. However, it is still the position of DOE-RL and WHC to only sample to a maximum of three feet. Any deeper sampling and analyses will be conducted during the CERCLA RI\FS process. See comment number 12, DOE-RL/WHC Response No. 3.

Ecology Response No. 3 (Rev. 1): The proposed soil sampling is appropriate for determining the extent of contamination, however, soil remediation will comply with the SCR. Any appropriate changes to this section pursuant to the SCR must be made prior to approval of this plan.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC Response No. 2, for comment number 1.

25. Page 7-3, line 19. The text states that the sampling and analysis program has been designed to determine if contaminants are present "that are regulated by Ecology." The *Federal Facility Agreement and Consent Order*, Section 6.3, states that treatment, storage, and/or disposal units will "normally close with consideration of all hazardous substances, which include radioactive constituents." The 303-K Facility closure plan must address all constituents present at the unit. — UMM of November 17, 1993

Ecology Requirement: Clarify the text to state that all hazardous constituents found at the 303-K Facility will be addressed in the closure plan.

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DOE-RL/WHC Response No. 1: Analyses will be conducted for all of the dangerous waste constituents stored at the facility. These constituents are determined from operation records from the 303-K Facility. The text will be modified to reference WAC 173-303.

Ecology Response No. 1: The DOE-RL/WHC state that all of the dangerous waste constituents stored at the 303-K Facility are listed in Table 7-1.

Ecology Requirement: This table must be revised to list all constituents of concern. This includes any radioactive constituents. Refer to Section 6.3 of the *Hanford Federal Facility Agreement and Consent Order*. This requirement also applies to comment numbers 26 and 27.

DOE-RL/WHC Response No. 2: The waste stored and the chemicals used over the life of the 303-K Facility are known. The newly added table (see response number 7) will be reevaluated to determine if any potentially hazardous substance was omitted from the compliance list (Table 7-1) of the closure plan. According to WAC 173-303-610, the facility is only responsible for potentially hazardous substances managed at the facility. Any contamination in the soil from operations in the 300 Area will be evaluated and remediated under the CERCLA RI/FS process for the 300-FF-3 Operable Unit. See response number 12.

Ecology Response No. 2: Although Table 7-1 does need to be reevaluated for omissions, the sole use of this table during the closure activities of this unit will be subject to the N&MWMP soil closure policy which is now in development. See number 12 for reference.

DOE-RL/WHC Response No. 3: Due to the delay in the release of the policy on soil closure standards being developed by Ecology, our position on these comments remain essentially the same.

26. Page 7-3, line 24. Refer to comment number 25 for clarification of constituents to be addressed. — Ecology letter of April 26, 1991

Ecology Requirement: Clarify that all constituents in the 303-K Facility are subject to this closure plan.

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DOE-RL/WHC Response No. 1: The text will be revised to indicate that Table 7-1 lists all the dangerous waste constituents stored at the 303-K Facility.

DOE-RL/WHC Response No. 2: See response numbers 12 and 25.

Ecology Response No. 2: See number 12 and 25.

DOE-RL/WHC Response No. 3: See comment number 12, response number 3.

27. Page 7-4, Table 7-1. The text states that the sampling and analysis program has been designed to determine if contaminants are present "that are regulated by Ecology." The *Federal Facility Agreement and Consent Order*, Section 6.3, states that treatment, storage, and/or disposal units will "normally close with consideration of all hazardous substances, which include radioactive constituents." The 303-K Facility closure plan must address all constituents present at the unit. — Ecology letter of April 26, 1991

Ecology Requirement: Correct this table accordingly.

DOE-RL/WHC Response No. 1: Table 7-1 includes all of the dangerous waste constituents stored at the 303-K Facility (see response numbers 25, 26, and 48).

DOE-RL/WHC Response No. 2: See response numbers 12 and 25.

Ecology Response No. 2: See numbers 12 and 25.

DOE-RL/WHC Response No. 3: See comment number 12, response number 3.

28. Page 7-3, line 27. The text discusses the use of baseline threshold levels and "other criteria." As discussed in comment number 14, baseline criteria (for soils only) and background (concrete, asphalt, and other building components) will be used for closure criteria. — UMM of November 17, 1993

Ecology Requirement: Clarify the text accordingly.

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DOE-RL/WHC Response No. 1: The text will be revised in accordance with the information provided in response numbers 1, 12, and 14.

DOE-RL/WHC Response No. 2: The paragraph starting on page 3, line 27 will be deleted. The paragraph starting on page 3, line 24 will be changed as follows.

"A list of potential contaminants at the 303-K Facility and action levels are provided in Table 7-1. The analytical results of Table 7-1 will be compared to local background threshold concentrations and health-based concentration limits as action levels."

Ecology Response No. 2: the proposed text must be revised to be in accordance with the closure policy discussed in number 12.

DOE-RL/WHC Response No. 3: See comment number 12, response number 3.

Ecology Response No. 3 (Rev. 1): This text must be revised to comply with the closure approach chosen for the 303-K unit.

DOE-RL/WHC Response No. 3: See DOE-RL/WHC Response No. 2, for comment number 1.

29. Page 7-3, line 41. The text states that chip sampling will be used for concrete sampling. This method is not adequate for sampling concrete. Please refer to the development task identified in the 300 ASE closure plan for more appropriate concrete sampling methods. — Ecology letter of November 6, 1990

Ecology Requirement: Change the concrete sampling procedure to be consistent with the methods being developed in the 300 ASE closure plan.

DOE-RL/WHC Response: The procedure will be revised as follows: "Removal of the concrete samples will be performed 'dry' to eliminate any contamination effects by coring or cutting lubricants. Chip samples will be collected by cutting a set of grooves, 1.63 to 2 inches apart and approximately 10.5 inches long in the surface of the concrete. The grooves will be cut at least 2 inches deep and one groove will be angled about 30 degrees toward the other to yield a narrow triangular sample segment between the bottoms of the grooves. Cross grooves, perpendicular to the ends of the sample grooves will permit the sample to be

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broken by prying out from the surface to yield a prism-shaped sample piece with an intact surface layer. Commercial equipment for cutting grooves is available. The equipment operates dry by pneumatically driven impact bits. The bits are readily cleaned to eliminate cross-contamination between samples.

30. Page 7-5, line 4. The text refers to the *Environmental Investigations and site Characterization Manual* (EII Manual, WHC-CM-7-7) for sampling procedures. Although it is appropriate for DOE/WHC to refer to these manuals, the sampling protocol must still be approved by Ecology. The EII manuals will ultimately be incorporated into the site-wide permit and it would be appropriate to reference these procedures as part of the site-wide permit. — Ecology letter of November 6, 1990

Ecology Requirement: Either include the specific section(s) of the EII manual (including all EII procedures referenced in this closure plan) or have the entire EII manual incorporated into the site-wide permit.

DOE-RL/WHC Response No. 1: The *Environmental Investigation and Site Characterization Manual* has been sent to Ecology and will be included as a part of the Hanford Site-wide permit. No changes to the text required.

Ecology Response No. 1: The DOE-RL/WHC state that the *Environmental Investigations and Site Characterization Manual* has been submitted as part of the Hanford Site-wide permit and that no changes to the text are required.

Ecology Requirement: Reference to the entire EII manual is not acceptable. The specific section must be referenced. Note that acceptance of any EII procedure is dependent on Ecology review and approval. Ecology anticipates that these will be reviewed as part of the development of the Hanford Site-wide permit.

DOE-RL/WHC Response No. 2: This is a general reference. A specific EII is referenced in the text when that specific subject is being discussed.

31. Page 7-9, line 11. The text discusses the use of chipping and coring for concrete sampling — Ecology letter of November 6, 1990

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and analysis. These techniques are ineffective for organic sampling in concrete (refer to comment number 29).

Ecology Requirement: Refer to comment number 29 for appropriate methods.

DOE-RL/WHC Response: See response number 29.

32. Page 7-9, Section 7.3.2.4.4. The text states that the soil sampling will occur to a depth of only 1 foot. Several references are given in support of this strategy. This sampling scheme is deficient (refer to comment number 24). — UMM of November 17, 1993

Ecology Requirement: Soil sampling will be required for depths greater than 1 foot. It is not appropriate to compare the soil characteristics around the single-shell tanks with that of the 300 Area to justify not sampling for metals and radionuclides. Further, List et al. (1976) and Jones (1978) do not investigate the evaporation of chlorinated organics in soils.

Finally, the statement that no driving head exists for contaminants under the building may be accurate, however, organic solvents can migrate to significant depths from an initial spill or from a small continuous source (such as a process sewer system). Similarly, any constituent mobilized by these solvents (i.e., metals and radionuclides) may be carried to greater depths than if they were not in the presence of solvents (refer to the 304-M closure plan for further discussion).

Therefore, in order to demonstrate clean closure or demonstration of baseline thresholds, soil sampling will be required to a depth greater than 1 foot. The DOE/WHC should propose the appropriate depths of sampling for review and approval by Ecology. This increased sampling depth should include soil sampling at regular intervals, with continuous logging for radiation.

DOE-RL/WHC Response No. 1: Sampling depths will be reevaluated (see response number 24).

Ecology Response No. 1 (Rev. 1): See comment number 24.

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DOE-RL/WHC Response No. 2: See DOE-RL/WHC Response No. 2, for comment number 1.

33. Page 7-9, Section 7.3.2.4.4. Although this section gives a description of the soil sampling activity, it is not clear if the entire 1-foot sample is to be composited or if discrete samples will be collected. — UMM of November 17, 1993

Ecology Requirement: In addition to the soil sampling changes identified in comment number 24, compositing over a 1-foot interval is not acceptable. Discrete interval sampling must be accomplished at smaller intervals. Refer to the 2101-M closure plan for additional guidance.

DOE-RL/WHC Response No. 1: The actual number and length of the individual samples at one soil sample location will be determined after the sampling depth is reevaluated (see response number 24). This information will be made clear in the text.

Ecology Response No. 1 (Rev. 1): The information describing whether these samples will be discrete over given areas or whether the intent is to composite, has not been completely resolved in this section. It should be noted that Ecology discourages composite sampling except in limited applications where there is evidence that contamination will be uniform. Add detailed information on how the discrete samples will be taken (e.g., the top inch, a one inch layer between 11 and 12 inches below grade, etc.).

DOE-RL/WHC Response No. 1: At one soil sampling point four discreet samples will be obtained, at the surface, at one foot, at two feet, and at 3 feet. The samples will not be composited. The depth of each sample will be approximately two inches (surface to 2 inches, eleven inches to one foot one inch, one foot eleven inches to two feet one inch, etc.). Enough soil volume will be obtained at each sample location to adequately analyze for the constituents of concern. This information will be added to the closure plan for clarity.

34. Page 7-13, line 40. The text states that the unit has been separated into eight sections for sampling purposes and that a minimum of 5 percent of the 1-m^2 grids will be used for sampling each section. Comparing the areas to be grouped as a sampling section with the sketches of the facility, the storage areas should be broken into five sections instead of — Ecology letter of April 23, 1992

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two. The current sampling program calls for two samples from the asphalt on the east side of the unit with the total area of approximately 233 m^2. This is far from the stated 5 percent goal.

Ecology Requirement: The outside areas should be divided into five sections as identified in Attachment 2. The 5 percent sampling frequency should be applied to the new sections.

DOE-RL/WHC Response: The grid will be redrawn and the random sampling will cover 5 percent of the unit (12 sample locations rather than three).

35. Page 7-14, line 4. The text discusses the baseline sampling program and states that soil sampling will only occur to a 1-foot depth. The baseline soil sampling must be the same as the unit sampling. — Ecology letter of November 6, 1990

Ecology Requirement. Refer to comment numbers 24 and 32 for the appropriate sampling protocol.

DOE-RL/WHC Response: The baseline soil sampling program will match the soil sampling program (depth) determined to be necessary for the facility (see response numbers 24 and 33).

36. Page 7-14, line 1. The text describes baseline soil sampling that will occur within the 300-FF-3 Operable Unit and near the 303-K Facility, however, no detail has been given. — UMM of November 17, 1993

Ecology Requirement: Exact soil sampling locations are required for the baseline sampling program. Provide a map with the appropriate level of detail necessary to accurately shown the proposed baseline sampling locations.

DOE-RL/WHC Response No. 1: A set of criteria for baseline values is currently under development in the 300 Area. This set of criteria is designed to ensure that the locations for baseline sampling will provide an accurate representation of local conditions. After the criteria have been developed, sampling locations will be selected and presented to Ecology. An appendix will be added to the closure plan with the baseline location criteria and the results of the baseline sampling.

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Ecology Response No. 1: The DOE-RL/WHC are developing a set of criteria for baseline values in the 300 Area.

Ecology Requirement: The appropriate criteria is area background (see comment number 12).

A plan for determining these values must be submitted to Ecology; it should include at least the sampling plan, a quality assurance/quality control plan, and a timetable for this effort. This plan may be submitted under separate cover and used for treatment, storage, and/or disposal units throughout the 300-FF-3 Operable Unit.

DOE-RL/WHC Response No. 2: Local background threshold values will be based on soil samples obtained at ten locations within the 300-FF-3 Operable Unit. Samples will be taken at the surface, at one foot, and at two feet at each location. When the sample locations have been determined, they will be included in the closure plan. Local background samples will not be taken in places of obvious contamination from past operations conducted in the 300 Area, however, any general contamination (if present) from past operations would be included. If general or source contamination exists, it would be from past practice operations and not from operations conducted in the 304 Facility. The Tri-Party Agreement states source contamination will be evaluated and remediated under the CERCLA/RI/FS process.

The local background sample analyses results will be analyzed statistically, using the tolerance interval test, to determine if the chemical concentrations from each sample are from a "hot spot." The purpose of the tolerance interval approach is to define a concentration range from local background data, within which a large proportion of the monitoring observations should fall with high probability. Any "hot spots" would fall outside of this range and not be included in the determination of the local background threshold (the initial action level).

Ecology Response No. 2: It is not clear if this proposed background determinations is to be used as part of the Hanford Site-Wide background study. If it is not, this should be clearly stated. If it is, this evaluation of the vadose zone background contaminant levels is too limited in scope. Because comparisons of contaminated vadose zone data to the 300 Area background data must be between the same soil horizons for this unit and others, the

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plan must be expanded to include deeper soil horizons. Refer to the Hanford Site-Wide soil background study for reference.

In the quoted statement, the first sentence is unsubstantiated and the second sentence is not in agreement with the general tenor of the Tri-Party Agreement and will not be in accordance with the closure policy under development by the N&MWMP. The quoted statement should be deleted.

DOE-RL/WHC Response No. 3: Soil samples from the 304 Concretion Facility will be compared to local background determined from samples obtained within the 300 Area and is not part of the Hanford Site-Wide background study. Due to the potential for general contamination throughout the 300 Area from past practice operations, it would be inappropriate to use Site-wide background for comparison to the 304 Concretion Facility samples. The locations for the 300 Area local background determinations have not been determined. When these locations are determined, the information will be added to the closure plan. Information on the 300 Area local background sampling can be found in Section 7.3.2.5.1 of the closure plan.

While it may not be substantiated, it is logical to assume any general contamination in the 300 Area would not be the result of the minor activities associated with the 304 Concretion Facility. Any general contamination would likely be from past practice operations such as fuel fabrication activities.

The second sentence is not in the closure plan.

Ecology Response No. 3 (Rev. 1): Soil cleanup standards are contained in the SCR policy. This section must be revised to comply with the SCR, and the closure option selected for the 303-K unit must be included. It may be appropriate to defer the selection of the closure option until after the sampling and analysis has been done, and the contamination levels at the unit are better understood.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC Response No. 2, for comment number 1.

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37.	Page 7-14, line 16. The text discusses the location for the soil sampling. The proposed area is to be within the boundary of the 303-K Facility. This is unacceptable. Baseline cannot be established from the treatment, storage, and/or disposal unit itself. Alternate locations must be provided. Ecology Requirement: Locate and propose specific concrete and asphalt sampling locations which are not located within the boundaries of the 303-K Facility and not impacted by past practices. **DOE-RL/WHC Response No. 1: See the discussion of concrete and asphalt baseline sampling in response number 14.** Ecology Response No. 1: Concrete and asphalt samples obtained within a treatment, storage, and/or disposal unit will not be accepted for determination of background contamination values. Ecology Requirement: Refer to comment number 14. **DOE-RL/WHC Response No. 2: Asphalt and concrete samples will be handled in the same manner. See response number 14.** Ecology Response No. 2: This approach is too narrow in scope; the designation procedure delineated under WAC 173-303-070 must be followed. See number 14. **DOE-RL/WHC Response No. 3: The position of DOE-RL and WHC remains essentially the same. This issue will require further discussion.** Ecology Response No. 3 (Rev. 1): See comment number 14 regarding concrete sampling. Ecology proposes the use of this same process for determining asphalt background. **DOE-RL/WHC Response No. 4: See DOE-RL/WHC Response No. 4 for comment number 14. Under Ecology's criteria, no adequate location would be available for background samples.**	Ecology letter of April 26, 1991

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38.	Page 7-14, line 44. The text states the location where the ceiling samples will be taken, however, there is no figure which depicts the location. Ecology Requirement: Add a figure which shows the exact location of the ceiling sampling. **DOE-RL/WHC Response: A figure will be added to indicate the exact locations of the ceiling sample sites.**	Ecology letter of April 23, 1992
39.	Page 7-15, line 41. The section on sampling the outside storage area is deficient. Ecology Requirement: Refer to comment number 24 for appropriate sampling. **DOE-RL/WHC Response: See response numbers 24 and 34.**	Ecology letter of November 6, 1990
40.	Page 7-16, line 8. The text discusses the use of chip sampling for the cement. This is not adequate. Ecology Requirement: Change the concrete sampling procedure to be consistent within the methods being developed in the 300 ASE closure plan. **DOE-RL/WHC Response: See response number 29.**	Ecology letter of November 6, 1990
41.	Page 7-16, line 20. The text states that cracks will be sampled every 10 feet. There is no justification given for this sample frequency, further, there is no scale drawing which clearly shows the sampling locations. Ecology Requirement: Give clear rationale for the use of the 10-foot sampling frequency on cracks. Provide a scale drawing of the affected area showing exact locations of the proposed sampling. **DOE-RL/WHC Response: The text will be revised to read "Crack and seam sampling locations will be documented after initial decontamination and prior to sampling. This will ensure that all visible cracks, with the exception of hairline cracks, are sampled.**	Ecology letter of April 23, 1992

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	Cracks will be sampled in the following manner: Each crack, seam, and expansion joint will be divided into 1-foot sections and a minimum of 5 percent of these sections will be sampled. Locations will be selected for investigation to ensure the most likely pathway for contamination to have entered the underlying soils. Indicators of the pathways used are the widest portion of the crack, portion of the crack with the lowest elevation, and stained areas of the crack."	
42.	Page 7-16, line 22. The text states that seams and expansion joints will be sampled once, however, there is no rationale given for this. As seams and joints in an old facility provide a pathway to the environment just as cracks do, it seems reasonable that they would be treated in a similar manner for sampling. Ecology Requirement: Either provide additional sampling, similar to that being done for cracks or provide detailed justification of the proposed sampling scheme for these areas. **DOE-RL/WHC Response: See response number 41.**	Ecology letter of November 6, 1990
43.	Page 7-16, Section 7.3.3. Once this closure plan is approved, changes to the plan must be in accordance with WAC 173-303-610. Ecology Requirement: Correct the text to state the appropriate closure plan amendment regulations will be followed. **DOE-RL/WHC Response: The appropriate regulations will be specified.**	Ecology letter of April 23, 1992
44.	Page 7-21, Section 7-3.9. The text continually states what information "should" be collected (page 7-23, line 20, etc.). The wording is not specific enough. Ecology Requirement: Change the text to read what information "must" be collected. **DOE-RL/WHC Response: The text will be modified to read what information 'must' be collected.**	Ecology letter of November 6, 1990

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45.	Page 7-26, line 28. The text states that the new data will be reviewed for "anomalous data." It is not clear what is defined as "anomalous data" and on what basis data would be disregarded. Ecology Requirement: The above points must be clarified in the text; these would be appropriately addressed in the quality control section. Further, all raw data must be reported, including "anomalous data" and the reason for this designation must be provided in the report. **DOE-RL/WHC Response: Section 7.3.9.8 will be modified to read "At the completion of all analyses, the samples will be returned to the collector. In no case will the samples be retained longer than 3 years unless specifically designated by the cognizant engineer."** **The information on 'anomalous data' was inappropriately included in this section. It is regarded as quality control/quality assurance and data reporting/checking guidance and will be provided in the Quality Assurance Project Plan.**	Ecology letter of November 6, 1990
46.	Page 7-26, line 28. The text states that a decontamination area will be established near and upwind of the sampling activity "whenever possible." When will it not be possible to meet such requirement (other than in calm conditions) and if the requirement cannot be met, will sampling still occur? Ecology Requirement: Clarify the above points and give further details on alternate procedures should sampling still occur when the "near and upwind" condition is not met. **DOE-RL/WHC Response: When sampling outside the building, a decontamination area will be provided upwind of the sampling area. If this is not possible, sampling will not occur that day. The text will be modified accordingly.**	Ecology letter of November 6, 1990
47.	Page 7-26, line 30. The text refers to a site-wide health and safety plan. Is one written, and if so, what is the exact reference? Ecology Requirement: Clarify what site-wide health and safety plan is being referenced. Further, provide this document for inclusion in the Hanford RCRA permit.	Ecology letter of November 6, 1990

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DOE-RL/WHC Response: The site-wide health and safety plan is in review and will be complete by the end of the calendar year.

48. Page 7-27, line 6. The SCINTREX UA-3 analytical method is intended to be used, however, the procedure is not included. Ecology must approve any procedure which deviates from SW-846 protocols. — Ecology letter of November 6, 1990

Ecology Requirement: Include the SCINTREX UA-3 methodology.

DOE-RL/WHC Response: Uranium is not regulated under RCRA, however, appropriate radionuclides sampling will be conducted in order for the DOE to fulfill their obligations under the Atomic Energy Act. This information is included in the closure plan for information purposes. The procedure for the SCINTREX UA-3 analytical method will be referenced and a copy of the procedure will be transmitted to Ecology.

49. Page 7-27, line 39. The text states that a health and safety plan "will" be developed for the 303-K Facility sampling. This plan must be developed prior to approval of this plan. — UMM of November 17, 1993

Ecology Requirement: Include the site safety plan in this document.

DOE-RL/WHC Response No. 1: The 303-K Facility Health and Safety Plan will be included in the closure plan. This plan is titled *Hazardous Waste Operation Permit* and will be prepared in accordance with EII 2.2, *Preparation of Hazardous Waste Operations Permit*.

DOE-RL/WHC Response No. 2: A Site-Wide Health and Safety Plan is being prepared and will be referenced in the closure plan. In addition, the 303-K Facility specific health and safety plan will be prepared prior to sampling and added to the closure plan at that time. This plan is titled *Hazardous Waste Operation Permit* and will be prepared in accordance with EII 2.2, *Preparation of Hazardous Waste Operation Permit*.

Ecology Response No. 2: This is not acceptable. This plan must be submitted prior to approval of the closure plan; sufficient time for Ecology review is required. The health and safety plan must be included with the next submittal.

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	DOE-RL/WHC Response No. 3: The position of DOE-RL and WHC is still that stated in DOE-RL/WHC Response No. 2, comment 49.	
	Ecology Response No. 3 (Rev. 1): As discussed at the December 19, 1991 Unit Managers meeting, it may be acceptable to defer submittal of the Health and Safety Plan until just prior to sampling at the Site. This is contingent upon the submittal of an example Hazardous Waste Operation Permit to Ecology. The exact details of the timing of HASP submittal and the sampling plan/closure plan approval will be discussed at future Unit Manager meetings. There must also be a reference in this section to the interim status contingency plan and training plan for this unit, as well as to the facility-wide contingency and training plans.	
	DOE-RL/WHC Response No. 4: An example of a Hazardous Waste Operations Permit will be sent to Ecology. There does not appear to be any reason to reference the training plan and contingency plan for the operation of the 303-K TSD Unit in the closure plan. The information on training for closure of the TSD unit is already included in the closure plan in Section 7.3.12.3 and Appendix E. For the facility-wide contingency and training plans please see ***Hanford Site Comments On The Draft Permit For The Treatment, Storage, And Disposal Of Dangerous Waste For The Hanford Facility*****, Volume 1, Page 71, Condition II.A and Page 80, Condition II.C.**	
50.	Page 7-28, line 12. The text references methods in this plan for containerizing rinse water and excess samples, etc., but does not give a citation.	UMM of November 17, 1993
	Ecology Requirement: Give the appropriate reference citation for the proposed methodology.	
	DOE-RL/WHC Response No. 1: Disposal procedures of unknown or suspect waste materials are controlled by EII 4.2, ***Interim Control of Unknown, Suspected Hazardous and Mixed Waste.*** **A summary of this information will be included in the text.**	
	DOE-RL/WHC Response No. 2: Disposal procedures of unknown or suspect waste materials are controlled by EII 4.2, ***Interim Control of Unknown, Suspected Hazardous and Mixed Waste.***	
	Waste materials are designated as unknown waste when:	

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- Criteria for suspected hazardous waste is not met, or
- field readings are suspect.

Waste material will be designated as suspected hazardous waste based upon process knowledge of material that is known to have been discharged to the area under investigation, provided:

- Direct instrumentation reading of organic vapor is in excess of 10 ppm above background levels, or
- pH is less than 3 or greater than 12.

Unknown waste drums will be moved to a collection area until laboratory analysis and final designation. Excess sample material and decontamination fluids (rinse water) will be containerized in 55-gallon drums. Materials (rags, personal protective equipment, etc.) will be designated with the waste it contacts.

Ecology Response No. 2: Because uranium contamination is a concern (due to the chemical toxicity of uranium) at this unit, radiation monitoring should be included in the field testing. Specify where this collection area will be and the time frames for designation.

DOE-RL/WHC Response No. 3: The procedures in EII 4.2 addresses the potential for radiological contamination. The title of EII 4.2 (shown in response number 2 of this comment) indicates it covers mixed waste as well as dangerous waste. The initial collection area will be at the 303-K Facility. Designation will be completed and the drum will be removed within 90 days after it is full.

Ecology Response No. 3 (Rev. 1): There are portions of E.I.I. 4.2 that are not acceptable practices. For example, it is not acceptable at this facility to delay the marking of the accumulation date for suspected hazardous waste until after the waste has been verified as dangerous waste or it meets the requirements of section 6.4 of E.I.I. 4.2. In general, this document is open-ended and vague, and does not consistently comply with WAC 173-303. It is

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more efficient to write specific requirements for decontamination and interim storage of suspected dangerous waste into this closure plan than to try to change the E.I.I.'s.

DOE-RL/WHC Response No. 4: RCRA sampling and remediation will follow the site wide procedure concerning investigative derived waste. EII 4.2 is presently being revised.

51. Page 7-28, line 1 6. The text discusses the disposal of material within a 90-day period. The "90-day clock" starts upon generation of the waste. Excessive time for sampling and analysis time will not be allowed as an excess for storing waste onsite for greater than 90 days. — UMM of November 17, 1993

Ecology Requirement: Change the text accordingly.

DOE-RL/WHC Response No. 1: Text will be modified to read "If the contaminants are found to be hazardous, arrangements will be made for proper offsite disposal of stored material within a 90-day period. The 90-day period will begin when the material is designated."

Ecology Response No. 1: The DOE-RL/WHC propose revising the text to state, "The 90-day period will begin when the material is designated." As previously stated, the 90-day clock begins at the time of generation; counting the 90-day period from the time of designation is likely to result in noncompliance.

Ecology Requirement: Revise the text to state, "The 90-day period will begin when the material is generated."

DOE-RL/WHC Response No. 2: Text will be modified to read "These 55-gallon steel containers will be stored in a designated area at the dangerous waste site until each container is full. When the container is full, the contents will be tested for dangerous waste. If the contents are found to be dangerous, arrangements will be made for proper disposal of the materials. The disposal will take place within a 90-day period after a container is full."

According to WAC 173-303-200(2)(a)(b)(c) and EII 4.2, the 90-day accumulation start date begins the day a waste is first generated or the day a quantity of suspected hazardous waste is being accumulated in containers in a storage location equals 55 gallons.

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Ecology Response No. 2: Clarify whether the,"designated area at the dangerous waste site," means at the 303-K Facility or the Hanford Site. Specify the time frames for sampling and analysis of these wastes. Specify where these wastes will be disposed of if they are mixed waste.

DOE-RL/WHC Response No. 3: The initial collection area will be at the 303-K Facility. Designation will be completed and the drum will be removed within 90 days after it is full. If the contents of a drum are determined to be mixed waste, it will be moved to the Central Waste Complex within 90 days.

Ecology Response No. 3 (Rev. 1): Ecology's position is still that the waste must be removed within 90 days of generation, not designation. When the quantity of waste in a satellite accumulation area exceeds 55 gallons, the 90 day storage limit starts. At the 303-K unit, there must be a designated storage area for wastes generated during cleanup activities.

DOE-RL/WHC Response No. 4: Agree. The initial collection area will be at the 303-K Unit and any waste will be removed within 90 days after the quantity exceeds 55-gallons. If the contents of a drum are determined to be mixed waste, it will be moved to the Central Waste Complex within 90 days.

52. Page 7-28, line 20. The text states that if no hazardous contamination is found, materials will be disposed of "according to onsite procedures." Language should be added to state these procedures are in compliance with all applicable state and federal regulations (i.e., WAC 173-304, Minimum Functional Standards, etc.). — Ecology letter of November 6, 1990

Ecology Requirement: Change the text accordingly.

DOE-RL/WHC Response: Text will be modified to read "... according to onsite procedures that are written in accordance to WAC 173-304, DOE Orders, and 40 CFR 261."

53. Page 7-28. The text briefly describes the training courses required for the 303-K Facility closure activities. This is not adequate. — UMM of November 17, 1993

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Ecology Requirement: Describe the training course contents and list the training required for each job classification.

DOE-RL/WHC Response No. 1: The list of training procedure. provided is adequate for this closure plan.

Ecology Response No. 1: Although Ecology requested information regarding training, the DOE-RL/WHC states that the information provided is, "adequate for this closure plan." The information presented is not adequate.

Ecology Requirement: Describe the course contents and list which training is required for individual job classifications.

DOE-RL/WHC Response No. 2: The following text, table, and appendix will be added to the closure plan in the appropriate place.

"All personnel at Westinghouse Hanford involved with the closure procedure of the 303-K Facility, will receive a level of dangerous waste training commensurate with their position. Personnel are generally placed into two job categories, Operations Manager and Supervisors (OM), and Nuclear Operators (NO).

- **The OM is responsible for supervising, coordinating, and directing the activities of NO.**
- **The NO is responsible for sampling, packaging, and handling of dangerous waste, nonradioactive, as well as radioactive material.**

Table 7-4 contains a matrix that relate job categories to the individual training course. Appendix E contains brief descriptions of selected training courses, including descriptions of the target audience, instructional technique, evaluation method, length of course, and frequency of retraining."

Ecology Response No. 2: These are too narrow in scope. For example, the 304 Concretion

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Facility has radiation zones, but RPT's are not covered. Expand the training section to cover all of the personnel which are required to be present during the closure activities.

DOE-RL/WHC Response No. 3: The training plan has been expanded to cover all the personnel that may be required to be present during closure activities. This information is included in Section 7.3.12.3 and Appendix E of the closure plan.

54. Page 7-29, Section 7.5. This section discusses the decontamination and disposal of the building and concrete pads. The text states that a "decommissioning work plan" will be written for this activity. This is a closure activity and must be addressed in the closure plan. — UMM of November 17, 1993

Ecology Requirement: Include all decontamination and decommissioning work plans within the closure plan.

DOE-RL/WHC Response No. 1: A 'decommissioning work plan' is a generic term for the implementation procedure used to provide specific field direction to workers actually performing the decontamination and demolition. This information is included in Sections 7.4, 7.5, and 7.6 of the closure plan. The actual decommissioning work plan will specify sufficient detail for field implementation of the items addressed in these sections. The decommissioning work plan will be included as an appendix in the closure plan. This will take place just before the work begins.

Ecology Response No. 1 (Rev. 1): The schedule for the submittal of the decommissioning work plan may be aligned with the HASP. However, if there is insufficient detail in the closure plan regarding the decommissioning activities, it will be required to be submitted prior to approval of the closure plan. It is important that Ecology be provided drafts of these documents prior to the start of work, since problems in the plans could delay the approval of the closure plan.

DOE-RL/WHC Response No. 2: The decommissioning work plan and the health and safety plan will be provided to Ecology for information only. These documents are not subject to approval by Ecology. The level of detail in the closure plan should be adequate. However, as stated above the documents may be added as appendices to the closure plan.

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55.	Page 7-30, line 7. The text discusses the deferral of some closure activities to the CERCLA process. This is not appropriate for the items at issue (buildings, floor, and outside storage areas). Ecology Requirement: Refer to comment number 14 for appropriate language. **DOE-RL/WHC Response: See response numbers 1 and 11.**	Ecology letter of November 6, 1990
56.	Page 7-30, Section 7.6. The text discusses the possibility of using an "interim cover." Only potential materials are discussed for this cover. This is not adequate. Ecology Requirement: Specify the cover materials and design in detail. This must include design drawings and specifications. **DOE-RL/WHC Response No. 1: The closure strategy for the 303-K Facility is clean closure. In the unlikely event the building and pads cannot be cleaned, the proposal is not to remove the building until CERCLA remediation; therefore, a cover design is not necessary. The first two sentences of this paragraph will be deleted.** Ecology Response No. 1: The DOE-RL/WHC state that in no case will a cover design be necessary. If it is determined after the sampling and analysis that it will be necessary for contaminated soils to be left in place until the CERCLA cleanup then a cover may be required; no other contaminated materials will be allowed to be left in place. This cover must be designed and approved prior to closure as part of the postclosure plan. Ecology Requirement: Submit specifications for cover materials and design within the required postclosure plan. See comment number 62. **DOE-RL/WHC Response No. 2: See the text to be added to Section 8.2, Postclosure Care, in response number 12.** Ecology Response No. 2: See number 12. **DOE-RL/WHC Response No. 3: See comment number 12, DOE-RL/WHC Response No. 3.**	Ecology letter of April 26, 1991

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57.	Page 7-30, Section 7.8. The text discusses the procedures for amending the approved closure plan but does not reference WAC 173-303-610. Ecology Requirement: Reference the appropriate language in WAC 173-303-610 for closure plan amendments. **DOE-RL/WHC Response: The text will be revised to include a reference to WAC 173-303-610(3).**	Ecology letter of November 6, 1990
58.	Page 7-31, Figure 7-8. The schedule for closure does not show the closure certification. Ecology Requirement: Modify the schedule to include closure certification. **DOE-RL/WHC Response: Closure certification will be included as an activity in the closure schedule.**	Ecology letter of April 23, 1992
59.	Page 7-31, Figure 7-8. The closure schedule shows preparation of the health and safety plan, Decommissioning Work Plan, etc., as activities occurring after approval of this plan. These documents must be included in the closure plan and should be identified in the closure schedule. Further, "Procurement Req's" are not appropriate for this schedule. This should be done prior to final approval of this plan. Ecology Requirement: Modify the schedule as discussed. **DOE-RL/WHC Response: Preparation of the health and safety plan and Decommissioning Work Plan will be removed from the schedule. See response numbers 49 and 54.**	Ecology letter of April 23, 1992
60.	Page 7-31, Figure 7-8. The Note in this figure states that "approximately 4 weeks is necessary for funding approval prior to start of work." This is not appropriate. Funding must be secured prior to final approval of this plan. Ecology Requirement: Remove the referenced Note. Further, the closure schedule must show initiation of closure work upon final approval of the plan.	Ecology letter of November 6, 1990

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DOE-RL/WHC Response: The schedule will be revised as requested.

61. Page 7-32, line 37. The text states that "EPA" will be provided with a survey plot. This should be Ecology and EPA. — Ecology letter of November 6, 1990

Ecology Requirement: Modify the text accordingly.

DOE-RL/WHC Response: The text will be revised to include Ecology.

62. Page 8-2, Section 8.2. A postclosure plan is not provided in the text. This is planned to be submitted with the CERCLA documents. This is not adequate. — Ecology letter of April 26, 1991

Ecology Requirement: A postclosure plan must be provided.

DOE-RL/WHC Response No. 1: A postclosure plan is not required unless the facility is not clean closed. If the soil is not clean closed, a section will be included in the closure plan describing the interim stabilization and care prior to remediation under the CERCLA RI/FS process.

Ecology Response No. 1: The DOE-RL/WHC state that they will not submit a postclosure plan. A postclosure plan is required, it should be presented in the form of an additional chapter to the closure plan with appendices as appropriate.

Ecology Requirement: A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared and submitted to Ecology.

DOE-RL/WHC Response No. 2: See the text to be added to Section 8.2, Postclosure Care, in response number 12.

Ecology Response No. 2: See number 12.

DOE-RL/WHC Response No. 3: See comment number 12, DOE-RL/WHC Response No. 3.

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63.	Section 8, 'Postclosure': There is no discussion of the notice to the local land use authority. Ecology Requirement: Add wording that includes the notice to the local land-use authority per the requirements of WAC 173-303-610(9). **DOE-RL/WHC Response: A sub-section will be added to Section 8 'Postclosure' that includes the notice ot the local land-use authority.**	UMM of October 13, 1994